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## Fortnightly Review

### Important News

**I**N THESE days of fast-moving historic events it is easy to overlook happenings of far-reaching socio-political significance. The daily news reporter snatches bits of the stories of the hour but in the pressure of the routine news he is rarely able to portray impassively the broad import of the great changes taking place in the world today.

Six months ago the Czechoslovakian crisis was merely a scheduled event for the future. The President of the United States had his mind on many problems but it could not be said that aviation or air defense was really one of them. Civil aviation was still being directed by a single government bureau in a large federal department and commercial air transport was merely a nuisance factor in two other large governmental agencies.

But history moves fast these days. The Czechoslovakian crisis brought bitter realization to more than one European country that aerial force was the greatest single determining factor in the relationships of nations. Some have realized that for a long time, but it took this one crisis and the resulting shift in the balance of power in Europe to drive home this one dominant new factor in the world's history.

Aviation in the United States has entered a new phase of its advancement and development. The creation of the Civil Aeronautics Authority was not born of a European crisis, but its creation and organization is now playing a vital part in this nation's national defense—and the key to national defense is air defense.

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## White House Plans World's Greatest Air Force for U. S.

### COMMITTEE FORMED FOR YOUTH SURVEY

Winthrop Rockefeller Heads Unit to  
Work with N.A.A. on New  
Air Study

Formation of a strong committee known as Air Youth of America to survey what is now being done in the field of youth aeronautic education was announced Oct. 24 by Winthrop Rockefeller, son of John D. Rockefeller, Jr. The committee will follow out a program initiated by the late Capt. Frank Hawks and has headquarters at 30 Rockefeller Plaza, New York City.

The National Aeronautic Association, governing body for air sport in the U. S., will assist in and coordinate the survey, and will further the preliminary studies made in the U. S. and Europe by William R. Enyart, secretary of the N.A.A.

Committee members are Winthrop Rockefeller, chairman; Major Edwin E. Aldrin, N.A.A. vice-president and prominent in aeronautical engineering and flying circles; Jacqueline Cochran, speed flyer and recent winner of the Bendix Trophy; Bill Enyart; Major Lester D. Gardner, Institute of the Aeronautical Sciences, and Grover Loening, pioneer aeronautical engineer. Mr. Ernest Gamache, former executive director of the Olympic Winter Games at Lake Placid, N. Y., is acting as director of research.

In the past few years, the announcement said, model plane building and competitions have become popular to the extent that over one million boys and girls hold membership in model plane clubs. These clubs have been sponsored by newspapers, vocational schools, park departments and similar agencies. Governmental studies of preparedness bring to light the relatively small number of reserve pilots, and various government agencies are seeking to remedy this deficiency. The survey is expected to indicate to what extent it may be possible to coordinate and standardize this widely scattered activity.

### Corps Asks Plane Bids

The U. S. Army Air Corps has invited aircraft manufacturers to bid on a contract for one to 500 basic combat single-engine planes, with bids to be submitted by Apr. 21, 1939.

### Air Defense Head



LOUIS JOHNSON

Assistant Secretary of War  
who is heading up the U. S. plans for  
national defense.

### CAA Has Active Part in National Defense Plans; Mechanics and Pilots to be Trained

**M**OST significant aviation news in many a moon is determination of the current Washington administration to build for the United States the world's greatest air force. Coincidentally the plans will be a boon to all commercial aviation.

This new policy represents a conversion of President Roosevelt—a Big-Navy man—to airplanes as the greatest single need for national defense. The Munich Conference was the predominant reason for the present concern in the White House for air defense. Two men—Col. Louis Johnson, Assistant Secretary of War, and the President's son, James, are credited with being the two most influential persons in focusing the mind of the President on aviation.

Second most significant aviation news is the fact that the Civil Aeronautics Authority is being drawn into national defense plans in a close and intimate way. It appears clear that the United States will now follow the European method of coordinating civil aviation closely with the military and naval.

It was also learned that the President has abolished the inter-departmental committee on aviation and is now relying solely on an unofficial "air cabinet" comprised of the Army, the Navy and the CAA. Other agencies such as the State Department are included but not on the same par.

With Louis Johnson as the ring-leader and spokesman, many conferences have been held within the past month, with the CAA represented each time. The next few months will see numerous important national defense plans announced.

The number of Army planes will be increased to a total estimated at 7,000 to 10,000, according to unofficial reports. It is significant that the White House has laid stress upon the Army, while nothing has been said about increasing the number of Navy aircraft.

A program of training mechanics is to be undertaken at an early date, probably by the National Youth Administration with the aid of the Civil Aeronautics Authority.

A broad training plan for pilots is in the wind with likelihood of federal aid or subsidy in some form. This

### Cub Remains Aloft 218 Hrs. for Record

Lancaster, Cal., Nov. 1—A Piper Cub was set down here today by Clyde H. Schlieper and Thomas H. Smith after it had been in the air since Oct. 23, or an unofficial elapsed time of 218-hrs. 23-mins. The previous lightplane record was 130-hrs. 10-mins. set by Russ Morris and Robert McDaniels of Richmond, Ind., Oct. 17. The flight was unique in that Schlieper, Smith and Harley Long flew in pairs, each of them leaving the plane by parachute and boarding it by rope ladder from a moving motor car. Refuelings were made about every nine hours using a rope and the automobile for contacts. Descent was necessary because of a leak in an auxiliary gas tank. The endurance record for all types of planes is 27 days, 5-hrs. 34-mins., made by Fred and Al Keys over Meridian, Miss., in June, 1935.

subsidy may take the form of "educational grants" but the actual plan has not yet been completed.

Those who have visited at the White House recently indicate that national defense is uppermost in the President's mind and that his chief interest is in the air force. To the industry this is encouraging news as the President has never been personally averse about aviation in any of its phases. The European situation with its complete surrender of Great Britain to the Fascist powers and consistent reports of Germany's large air force, is the principal reason for the new interest by the White House in the air.

Any program that will be undertaken will of necessity be a long-term one. The Air Corps and the industry well know that airplanes can't be built in a short time and that if a goal of 7,000 craft is established, some years will be necessary for fruition. But there is no question now that the administration is determined to have an air defense second to none in the world.

The national defense program will benefit every phase of civil aviation. Part of the program is the strengthening of the air transport system, while other parts will be the training of pilots and mechanics and the improvement of airports. The airways system will be completed at an early date. This will require man power and airplanes. But the coordination of civil aeronautics with the military is a new step in the American government and will tend to bring the civil phases into the sphere of influence of the military.

Washington was no little interested when the President, on Oct. 28, visited the Naval Air Station at Anacostia to see some of the new Navy airplanes. With him were Army and Navy officials and members of the CAA.

Chief attraction at Anacostia was the Navy's new \$1,000,000 experimental long-range bomber constructed by Consolidated Aircraft Corp., San Diego, which had flown non-stop from San Diego in 13 hours and 55 minutes. At the controls of the huge 25-ton boat was Lieut. Comdr. Andrew Crinkley, who has been conducting acceptance tests. With a crew of 15 the flying boat is capable of flying 4,000 miles without refueling. Without landing gear equipment, the boat flew 2,300 miles across land.

The Consolidated boat is powered with four 14-cylinder Pratt & Whitney engines. Its wing span is 115 feet and it measures 23 feet 3 inches in height. The President also viewed other types of planes and indicated that he will keep close watch on aviation in the future.

### Too Many Lines in U. S., P. G. Johnson Tells Group

Fort William, Ont., Oct. 31—Philip G. Johnson, vice-president in charge of operations of Trans-Canada Air Lines, told the Canadian Club tonight that Canada should not put feeder lines into operation "unless the economic conditions warrant it, and I don't think the same mistake should be made as in the United States, where there are, if possible, too many airlines in operation."

### Fenwick Sails to Paris

Hugh Fenwick, export sales engineer of Aviation Manufacturing Corp. sailed Nov. 12 on the S. S. Normandie to attend the International Aircraft Salon in Paris in the interests of Lycoming, Vultee and Stinson divisions of the corporation. Following the show he plans a business tour of several European countries.

## Army's Challenge to Europe



The Curtiss XP-40 shown in flight. (Army Air Corps Photo).

### Air Corps Gets New Curtiss Pursuit Ship; Liquid Cooled Engine

The Army Air Corps has announced receipt of a new high speed experimental single-engine pursuit plane, designated the XP-40 (Curtiss), which, like the Curtiss P-37 under test for several months, represents the latest advance in American aeronautical engineering designs stressing speed. This plane incorporates a liquid cooled engine which make possible radically streamlined cowling. Critics of American fighting craft have made much of this country's failure to provide such features, citing Germany's much publicized Heinkels and Messerschmitts.

Although extensive tests have only begun and the Air Corps is maintaining its usual secrecy, it has released the following statement, sketchy except for the description of the pilot's heater:

"The Curtiss XP-40 Pursuit is a single-engine, internally braced monoplane of all-metal construction, except for control surfaces which are metal-frame fabric covered. It has flaps, retractable landing gear and tail wheel, is powered with the Air Corps type of the Allison engine, built by the Allison Engineering Co. of Indianapolis. The landing gear is of single strut, pneumatic oleo type, retractable into the wing. The tail wheel is steerable to provide ease of handling on the ground.

"The Allison engine is liquid-cooled and of the conventional V-type construction. This gives a materially reduced frontal area when compared to radial type engines. The smaller engine permits the use of a correspondingly smaller fuselage. The plane is equipped with a Curtiss constant speed propeller, is provided with two machine guns, synchronized so as to fire through the propeller.

"A command radio set built to United States Army Signal Corps specifications permits communications between the planes in the air and coordination with the anti-aircraft alert net, so that pursuit planes in the air may be guided from the command post on the ground, so that they can intercept hostile bombers in time to prevent attack by the bombers.

"The plane is also equipped with oxygen so as to permit operation at the extreme altitudes necessary in modern pursuit operations.

"Due to the extreme cold normally encountered in such altitudes, the plane is provided with a heater. As one of the test pilots has jokingly

remarked, it was the first time he had ever enjoyed the comforts of an air conditioned cockpit, as this heater may be set to provide either hot or cool air, which ever the pilot wishes. The reason for this is that in the sudden changes from extreme altitude, with its intense cold, to the high temperatures encountered on the ground during the summer months, it would be impossible to wear just the right flying clothing. By means of this heater average amounts of flying clothing may be worn, and the pilot will remain comfortable and therefore be able to fight with his full efficiency at ground level or at 30,000-ft. altitude."

### British Bombers Fly 7,162 Miles Non-Stop

A new long distance non-stop record of 7,162 miles was set Nov. 7 by two of three single motored British Vickers Wellesley bombers of the Royal Air Force. All three departed from Ismailia, Egypt, and two completed their non-stop flight at Darwin, Australia, in an unofficial time of 48-hrs. 5-mins. The third plane landed for fuel at Kupang, Timor Island, Dutch East Indies, but it too exceeded the Russian non-stop record of 6,295.6 miles, set by three USSR pilots in July, 1937, on a Moscow-San Jacinto, Cal., hop. The third plane reached Darwin about 3 1/2-hrs. later.

In command of the 8 other airmen was Squadron Leader R. Kellett. Strong winds and rain were encountered over the last 800 miles. The Wellesley as delivered to the RAF has a Bristol Pegasus XX engine. Span is 74-ft. 7-in.; length is 29-ft. 3-in. Speed at 9,680-ft. is 228-mph.

### U. S. Has 21,526 Pilots

The United States had 21,526 pilots and 10,091 aircraft holding active federal certificates as of Oct. 1, as compared with 17,379 pilots and 8,430 planes on Oct. 1, 1937, the CAA announces. Total number of aircraft, certificated and uncertificated, on record Oct. 1 was 11,345, as compared with 10,120 a year ago. Uncertificated aircraft totaled 1,254.

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### Edith Lackner Tribute

Cincinnati, Nov. 2—Flowers were dropped from 15 planes today as a final tribute to the memory of Edith Lackner, well known woman pilot and secretary of the Ninety-Nines, who was killed in a crash at Williamstown, W. Va., on Oct. 29. The local tribute was arranged by Herman Bayless, chairman of the aviation committee of the Chamber of Commerce. Many well known flyers sent condolences. Miss Lackner apparently lost her way returning from Cleveland where she had attended a Ninety-Nine meeting at the home of Florence H. Boswell.

### Papana in Suicide Attempt

Capt. Alex Papana, Rumanian flyer whose efforts to fly from the United States to his native country ended in crashes, attempted suicide and was in a serious condition, according to press dispatches from Bucharest Nov. 7. His wife died in childbirth Sept. 5, while he was in America.

### Trouble for Low Flyer

Scranton, Pa., Nov. 1—Because he flew so low over a baseball diamond that "he almost took the hats off the players," Richard Seamans, Factoryville, Pa., will be arraigned before Ald. Patrick I. Boland soon on a charge of violating the state aeronautics code. John J. Quinn, state aviation inspector, made the charges.

### Airship Firm to Experiment

Ventura, Cal., Oct. 28—National Airship Corp., Los Angeles, has leased 20 acres near here and will erect a building 50-ft. by 200-ft., Louis Goebel, property owner, has revealed. The site, which has already been cleared, will be used to develop experimentally a metal semi-rigid tube type dirigible, it was said.

### Sea-Going Execs

Executives of the air transport industry will hold the annual meeting of the Air Transport Association Nov. 16-18 on board a boat cruising the Texas waterways in the vicinity of Galveston and Houston. On Nov. 19 the officials will be the guests of the Houston Chamber of Commerce at a dinner being arranged by a committee headed by Gen. Walter B. Pyron.

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## Multi-Engine Planes Favored by CAA for Over-Ocean Flying

Although there has been no official ruling to date, it is learned that the Civil Aeronautics Authority prefers three- or four-engined planes for over-ocean flying and is not likely to approve twin-motored transports for such operations except for survey flights.

Such a ruling by the CAA would affect American Export Airlines, which recently ordered a \$150,000 twin-motored Consolidated flying boat, and issued statements to the effect that it would begin scheduled trans-Atlantic crossings next year. As in the case of Pan American Airways, between Seattle and Juneau, the CAA has allowed the use of twin-motored planes for survey flights and the carriage of mail, but has never approved passenger service.

Many details remain to be ironed out before regular trans-Atlantic mail and passenger schedules can be inaugurated. Much depends upon the performance of the four-engined Boeing Clipper, which has yet to obtain an approved type certificate from the CAA. The first of these ships, and possibly the second, may be placed upon Pan American Airways' Pacific route, because since the loss of the Hawaiian Clipper the company has been operating the line with two planes, whereas four are necessary to maintain weekly schedules.

The trans-Atlantic meteorological system has been functioning for some time, but the CAA also wants additional data as to its adequacy. It is not known how many test flights across the Atlantic will be required with the Boeing Clipper. This will be determined after the first trip.

### Airship Bids Soon

The Navy Department announced Nov. 3 that it would ask for bids in the near future for a rigid airship not more than 325 feet long and with a gas capacity of 1,000,000 cubic feet. Congress appropriated funds for a new airship at the last session. The ill-fated Akron and Macon were each 785 feet long and of 6,500,000 cubic feet capacity. The de-commissioned Los Angeles, now used for training at Lakehurst, N. J., is of 2,470,000 cubic feet capacity. Experts were unanimous in believing that a 1,000,000 cubic feet airship would not be of great use, although it will keep the Navy's hand in lighter-than-air.

### National Opens Route

National Airlines Nov. 1 began air mail service between New Orleans and Jacksonville, and passenger service was added a few days later. Stops include Tallahassee, Pensacola and Mobile, and when airports are improved Marianna, Fla., and Gulfport, Miss., will be added.

### Omaha Show in Red

Omaha, Nov. 3—Approximately \$4,500 still is owing to creditors of the Mid-Continent Aviation Exposition held here in connection with the convention last month of the NASAO. Creditors have agreed to defer action until George Read, of Lincoln, show promoter, has had reasonable time to make plans for settlement. Read personally spent about \$3,500 to open the show, it is said.

Hugh Herndon, Jr., who with Clyde Pangborn made the first nonstop Pacific flight, in 1931, from Tokio to Kenatchee, Wash., is now an assistant pilot for the conservation department of the state of New York, spotting forest fires and illegal fishing activities.

## Altitude Record



Lieut. Col. Mario Pezzi (above), commander of the high altitude department of the Italian Air Ministry, established a new world altitude record for airplanes Oct. 22 at Guidonia Airport, near Rome, when he reached a height of 56,016.94 feet (17,074 metres), surpassing the former record held by M. J. Adam of England of 53,937 feet (16,440 metres). He flew a special plane, built by the Caproni factory, with water-tight cabin and powered with a Piaggio engine. The Air Ministry has withheld other details of the equipment. The pilot experienced temperatures as low as 59 degrees below zero.

## Giro Air Mail Bids To Be Advertised Soon

The Post Office Department will advertise for bids on autogiro post office-to-airport air mail service in the "very near future," it is learned in Washington. Service will be inaugurated in either Philadelphia or Chicago, the only two cities with large post office roofs.

Although details of the proposed advertisements are not known, it is thought that payment to the contractor will be on a poundage rather than a mileage basis. The P. O. is working in co-operation with the Treasury Department, which has certain jurisdiction over post office buildings.

## Airport Hearings Held

With a strong preponderance of testimony favoring federal aid for airport construction and improvements, the national airport survey committee of the CAA heard representatives of numerous organizations early in November as part of the comprehensive airport survey under way. Most concrete proposals made were by the airport committee of the Air Transport Association and the U. S. Conference of Mayors of which Paul V. Betters is executive director. Twenty-one organizations were invited to express opinions. The survey is to be completed for Congress by Feb. 1.

## Hinckley the Gallant

A stewardess on a westbound transcontinental sleeper plane was having trouble making up one of the berths when a passenger approached and courteously offered his assistance. Although somewhat surprised, she accepted his help and the gentleman did a very neat, efficient job. To prove that it was not just luck, the passenger, with the stewardess' permission, made up the rest of the berths. Later, when queried by another passenger, she admitted that she did not know her "assistant's" name, and was embarrassed a little when informed that he was Robert H. Hinckley, member of the Civil Aeronautics Authority.

## Nebraska Ground School To Open Late This Month

Lincoln, Neb., Nov. 3—Nebraska's first aeronautical ground school, developed by the state aeronautics commission, will get under way here late this month. I. V. Packard, secretary of the commission, reveals. Subjects include aerodynamics, flight theory, aircraft instruments, meteorology, navigation, structure, rigging, civil air regulations and engines and accessories.

"The course will be quite elementary," Packard said, "and classes will be entirely by lecture, with text illustrations available for home study. The boys seem to be further advanced in aviation knowledge than the adults, so the first classes will be restricted to persons over 21. Meanwhile, we are planning more advanced instruction for the youngsters. We expect the classes to be inaugurated in the larger communities over the state through co-operation of junior chambers of commerce, and our purpose is to build the right psychology toward flying and induce young persons to go into the industry as a life vocation."

Backing the Lincoln project are Bill Brown, chairman of the junior chamber's aviation committee, and pilots Richard Beeler and Alva White.

## CAA Testing Clipper

With manufacturer's tests completed on the new Boeing Clipper, a staff of inspectors and representatives of the Civil Aeronautics Authority have assembled in Seattle to qualify the 74-passenger transport for a certificate. Included are R. D. Bedinger, regional supervisor, who will act as chairman; J. D. Baldwin, New York, senior engineering inspector; George W. Haldeman, engineering inspector from Detroit; H. C. Sine, aircraft inspector for the 7th region; N. P. Crews, Washington, D. C. aeronautical engineer of the aircraft airworthiness division, and O. A. Rost, Oakland, air carrier maintenance inspector. Advisors include Robert Ayer, engineer in charge of the flight test branch, L. J. Holoubek, senior engineering inspector for the 6th region, W. T. Miller, and E. L. Yuravich, chief of the Foreign Airline Inspection Service.

## Transport Session Slated

The air transport committee of the Institute of the Aeronautical Sciences will sponsor a discussion meeting Nov. 18-19 at Hotel Morrison, Chicago. The committee, headed by William Littlewood, of American Airlines, includes Larry Fritz, TWA; Charles Froesch, Eastern Air Lines; Lester Gardner, secretary of the IAS; Andre Priester, Pan American Airways, and R. W. Schroeder, United Air Lines.

## Aviation Calendar

- Nov. 17-18—Symposium of Aeronautical Law, Federal Bar Associations of New York, New Jersey and Connecticut. Room 110, Federal Court House, Foley Square, New York City. (Evenings, 8 p. m.)
- Nov. 18-19—Air Transport Meeting, Institute of the Aeronautical Sciences, Hotel Morrison, Chicago.
- Nov. 25-Dec. 11—16th International Air Show, Paris, France.
- January—Meeting of the Air Transport Association engineering and maintenance committee. City and date tentative.
- Jan. 6-8—Midyear Meeting, Florida Aviation Association and 11th Annual All-American Air Meet, Miami, Fla.
- Jan. 15-17—NAA Annual Convention, St. Louis, Mo.
- Mar. 3-5—Southwest Aviation Conference, Ft. Worth, Tex.
- June 24-July 9-10th Annual National Soaring Contest, Elmira, N. Y.

## PAA ANNIVERSARY

Clippers Have Flown 16,080,000  
Passenger-Miles Across Pacific  
in 2 Years

Pan American Airways on Oct. 21 celebrated its second anniversary of providing trans-Pacific passenger service, and states that at the beginning of the third year its Clippers have flown 16,080,000 passenger-miles, a world's record for trans-oceanic air transportation. Passengers had been carried on 187 of the 244 Clipper crossings to Oct. 21, 1938. Since the first air mail flight on Nov. 22, 1935, the planes have covered 2,161,000 route miles in regular operation.

The company's records show that 53% of its trans-Pacific passengers make the trip for pleasure, 42% travel on business, 3% for emergency reasons and 2% because of change of residence. Seventy-one per cent of the passengers are men, 29% women.

## Earhart Fund to Operate Chicago Ambulance Plane

Chicago, Nov. 2—An ambulance plane which will be stationed at Municipal Airport available for emergency service at all times has been ordered by Dr. Irene Behnke, founder and president of the Women's Pioneer Aircraft Association, and the Amelia Earhart Memorial Civic Club. Funds are being raised by popular subscription here to pay for the craft, a modified Beechcraft expected to cost about \$20,000. Delivery will be within six months. The "ship of mercy" will be a memorial to Miss Earhart. Two injured passengers, a doctor, nurse and co-pilot will be accommodated, and cruising speed will be 180-mph. Dr. Behnke is the only woman member of the Chicago Aero Commission.

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# Exports Must Be Safeguarded

Unless Manufacturers Organize to Protect Our Foreign Markets, European "Dumping" Will Kill U. S. Aircraft Industry's "Greatest Single Asset", Commerce Chief Warns

By Irving H. Taylor  
Chief, Automotive-Aeronautics Trade Division  
Bureau of Foreign and Domestic Commerce  
U. S. Department of Commerce

(Address delivered before a group of 60 West Coast aeronautical executives at a luncheon meeting Oct. 17 arranged by the Los Angeles Chamber of Commerce)

There can be no question but that during recent years a great many American exporters of aircraft and related aeronautical products have been well centered on the homing beam that has made for happy as well as profitable landings in foreign trade fields. There have been some minor mishaps along the way



Taylor

but very few, if any, major crackups, and, as far as I can recall, no "wash-outs." However, like all other world flights, of which that of Howard Hughes is the latest shining example, aeronautic merchandising trail blazing abroad must be carefully planned and all the hurdles provided for. The export beam is steady and strong right now but what will happen if it fades out, shifts or some of us find ourselves lost in the process of cutting across beams—sometimes I wonder if certain exporters even possess a direction finder. Export navigating by the seat of one's breeches is out in these days of bicker, barter and bum steers.

I only ask that the aeronautic industry listen to what I have to say. The job which I shall propose is theirs—not ours in Washington. I have received unstinted promises of support from all the individuals with whom I have discussed my ideas during the past three years. I am not seeking any more promises. However, if the industry finds my proposition, made in its own interests, sound, I hope that it will supply the initiative which thus far has been woefully lacking. To use a seasonally appropriate football illustration, as a lineman, I may suggest a play and run with the ball if it's passed to me, but the men in this aeronautical business must first call the signals and put the ball in play.

According to the information supplied to the Department of Commerce on shippers' export declarations, we sent \$17,500,000 worth of aeronautic products abroad in 1934—this included aircraft, aircraft engines, parachutes and all the parts and accessories. That was the record export year when, among other things, 490 complete planes were shipped to foreign buyers.

The next year, our big buyers like China, Russia, Peru, Germany, and Colombia eased off, and, despite increases to a number of other countries, notably the Netherlands, Japan, and Brazil, the total was appreciably off. Topped by more than \$7,000,000 of business from China and a sharp step up of Argentine orders, 1936 moved to new high ground. All previous highs were eclipsed in 1937 when aeronautic

exports advanced 71%. With returns in for only eight months of 1938, the total, approaching \$49,000,000 is already 23% ahead of the entire record year 1937—the outlook is for a 1938 total of close to \$73,000,000, which would be not only a new record but 85 percent better than the previous high mark.

## Export Leaders

Where does all this business come from? The shifts from one year to another as between foreign markets have been so decided that to get a fair gauge of things we have based our market explorations on the experience of the last five years, 1933 through 1937, when our exports declared as aeronautic products attained a total value of \$103,681,000. The area comprising Europe, Africa, and Canada took 39 percent of this total—the leaders being the Netherlands, Germany, Canada, Turkey and the United Kingdom, whose orders totalled almost \$30,000,000 or 73% of the regional total. The Australasian region took 33 percent of the world five-year total—China, Japan, Siam, Australia, the Netherlands Indies, Hong Kong and the Philippine Islands accounted for 98 percent. Latin America absorbed 28 percent of our five years' aeronautic exports—here Argentina, Brazil, and Mexico were our best customers, taking 60 percent of the regional total.

Why have I cited all of these figures—statistics, someone said, are monuments raised to the dead and buried past? I mention these merely to impress those in this key industry anew with the size of their export business—an export business which this year will approximate the total value of the American aeronautic industry's entire output in 1936. Using the Aeronautical Chamber's figure of \$73,000,000 as the total value of production during the first half of 1938, exports during that period, amounting to more than \$37,000,000, absorbed 51% and still this doesn't take into account the important revenue received from foreign licensees. What part of the aeronautic manufacturers' net profits derive from export? Some have estimated that the industry average would be at least 70 percent, while one leading producer advised me recently that 85 percent of their profits came from export business. One important aircraft company for a number of years has occupied its expanding plant facilities exclusively with foreign orders and the profits realized were much greater than would have been the case were they producing wholly or in part for domestic consumption.

I don't think it is necessary to sell

## 5th Atlas Issued

The aviation department of Gulf Oil Corp., of which Major Al Williams is manager, has published the fifth edition of the Gulf Aviation Atlas, one of the handiest and most useful of aeronautical publications. It contains a chronological review of aviation history, photos of ships of the air, today's leaders in aviation, airway maps of the five continents, routes of historical flights, records, aerobatic techniques, aeronautical trophies and other information.

an aeronautical manufacturer on the desirability or indispensability of export business. It is a nice, clean business which, generally speaking, comes right to its door, while the terms of payment, acceptance and delivery are generally dictated by the seller. The domestic business is much more difficult, but the industry willingly provides costly organization to secure and protect this least profitable half of your turnover. How much has the industry invested in export?

## Favors Big Exports

Most of its aircraft business abroad is in military ships. I am not condemning such trade as long as it is legitimately pursued. Quite to the contrary, I firmly believe that it is in the very best interest of our national defense and national economy that the industry should do this business on an increasing scale and do it from its plants in the United States. But the question the aeronautic producers must consider is how long will this foreign and domestic military plane business sustain this important industry? I am convinced that the long-term future of this industry inevitably depends on the peace-time growth of scheduled air transport—passenger, mail, and freight—and private flying. The time may not be far distant when the rearmament race will cease and the non-manufacturing markets of the world will be glutted with obsolete military planes practically given away by European governments as good-will tokens or in exchange for coffee, nitrates and rubber.

This great industry has survived many of its growing pains and today, with order backlogs which will keep many plants going at full capacity for another twelve months, is, in my opinion, ignoring the warning breakers ahead. I have reference to the very obvious fact that, with but few exceptions, individual companies and the industry as a whole are neglecting to organize to protect and advance its export position. To be sure, little organization is required to sell our aeronautical products abroad today, but who knows what the export situation will be in 1940 and thereafter? Will our manufacturers wait until their export order books are empty? Long before that, their markets will be irretrievably lost to European suppliers. It is generally considered sound practice during lush years to plow some of the profits back into the business—in this case, back into the export business. I am urging that serious and immediate consideration be given to the introduction of "foreign market research" and "merchandising" into the aeronautic vocabulary.

## Can't Gamble Future

The industry has built up too big an investment to gamble on the future of its exports or trust solely on the continuance of the rearmament race. When in the course of time orders cease rolling in from abroad, the answer will not be, as abroad, dumping of these products through the aid of a government subsidy. The American way would be to plan the right export product, for the right time, offered in the right places, at the right price and on the right terms. Only organization started now can meet this future need.

This organization for export must be set up on three fronts. The individual

company, commensurate with its means and present export activity, should invest in personnel to study foreign markets and the product they will require. The industry's national trade association has long had its export job cut out for it. Then too, the organization which I represent has an aeronautic trade promotion setup which can and would be expanded if the industry required increased activity on our part.

What aeronautic export organization exists today? Each factory representative is in a position to answer for his own company. For the last three years, I have searched in vain for any such organized activity in your national trade association; we ourselves have felt a great need for such a cooperating agency. With the very limited staff in the Aeronautics Trade Section of my Division in the Bureau of Foreign and Domestic Commerce, we try to keep before our aeronautic exporters news of what is happening in foreign markets, which might influence their sales of civil aircraft and related products. We give the industry this information in various forms—it is only a small part of what we know the industry should have but there is no evidence that it is even set up to assimilate this limited contribution. The sources of our information, which comes in from abroad by regular mail, air mail and radio, are the 33 foreign offices of the Department of Commerce and hundreds of American consular offices. These men, many of them having had past training in the field of aviation, have access to official data and maintain close contact with the foreign buyers of aeronautical equipment. Here the aeronautical industry has literally hundreds of highly intelligent trade promoters abroad anxious to help and very few firms have made use of their services, either direct or through our district offices and in Washington.

## Capital Receptive

I do not mean to invite a deluge of requests for assistance, because we are not at present staffed to meet such an emergency. But I do urge that members of the industry inform themselves on our setup and make more use of it.

Some of the aeronautical firms, I am sure, are going to fire back at me demands that their exports not be impeded by Washington. I think I have the answer to that one too. If you will organize and present your case forcibly, I personally am convinced that you will find an attentive audience in the National Capital. But organization for export within the industry must come first and that's a job that must be started at once while the industry has this export business—put it off for two years and it may be too late.

I am trying to sell the American aeronautical industry an insurance policy. What would it consider a reasonable premium on an export potential of say \$100,100,000? Perhaps the industry thinks it is getting the business for nothing today, but it should not overlook the fact that most of its members have made a considerable capital investment to take care of this export volume. I, for one, want to see everything possible done to safeguard, through the years, this industry's greatest present asset—export trade.





# The Birdmen's Perch

**TEN'SHUN!** The 5th edition of the Gulf Aviation Atlas has just come off the press and is *yours for the asking*. A big new stream liner carrying a pay load of flying dope, charts, maps, pictures, air history, etc. Everybody ought to have one. For your *free* copy, write:

**MAJOR AL WILLIAMS**, alias "Tattered Wing-Tips,"  
Mgr. Gulf Aviation Products, Gulf Bldg., Pittsburgh, Pa.

## AVIATION QUIZ

Here's the first monthly quiz. Send your answers (and a big red apple) to old Professor Wing-Tips to be corrected. By the way, slip us your comments on the side with a question or two of your own—we'll give you a credit line.

1. Who was the first woman to fly the English Channel?
2. What is meant "by thumbing the sun?"
3. What was the date of the first round-the-world flight?
4. Give—within 5000 mi.—the number of miles of regularly established passenger airlines, foreign and domestic, operated by U. S. airlines at the end of 1937.
5. Has one plane ever made two trips around the world?

(The last edition of the Gulf Aviation Atlas broke all records for popularity! This one's even better. Send for yours today.)

## DIVIDEND NOTICE



When you buy Gulfpride—the world's finest oil for planes—you're getting up to 20% extra lubricating power per quart.

For Gulfpride is refined both by conventional methods AND by the famous Gulf-owned Alchlor process that removes as much as 20% more sludge and dirt from the 100% Pure Pennsylvania.

(Ques. What valuable aviation handbook is available to all interested in flying, on request? Ans. The new 1938 Gulf Aviation Atlas—a postcard brings yours.)

## GOING WITH THE WIND DEPT.



The problem this month is a honey. If



you get it, you're smarter than the two guys we tried it on. Mail your answer to T.W.T. for the official solution. All set...?

On a round trip between two cities a plane flew at a rate of 165 m.p.h. with the wind and 120 m.p.h. against it. It took 1 hour 48 minutes longer to go against the wind. How long was the round trip?

(P. S. While you're about it, ask for your Atlas. That's a honey, too!)

## THIS MONTH'S WHOPPER

Dear Major:

When we can find a lawyer hungry enough to take the case we're gonna sue, but in the meantime I wanna tell you how you robbed us of our first Conference Championship since 1921:

Man and boy, I've been Captain and quarterback at East Swampscott Mechanics & Teachers for 20 years, but this year was the toughest ever. What with all the taxes comin' out of our sal—scholarships, it's been kinda hard to attract the right sort of young men to East Swampscott. So this season the team wasn't so hot.

Well, somehow we got through to our big game with Southwest Plumbers & Clamdiggers. It was a tough fight, but we were ahead 89-87. Their ball on their own 2-yard line, with 20 seconds to play. We figured we were in.

They came out of their huddle. The teams

lined up. The ball was snapped. Then Steve Guzzu, their fullback, took it and booted a beautiful drop kick square between the goal posts 117 yards away! The fans went wild!

Later I found out what happened. Their Captain, the dirty crook, had a bottle of Gulf Aviation Gas in his back pocket, and when they were in the huddle he sprinkled some on the ball and some on Steve's right foot.

I forgot to tell you, after the ball cleared the goal posts it kept right on going. Knocked a peanut vender off the top tier of seats (he's suing you, too), clipped 10 feet off the gymnasium chimney (you'll have to pay the damages), and when last seen was headed straight for the Rocky Mountains.

Southwest thought they were pretty smart, but Steve ain't so happy about it. They have to keep a 100-lb. weight chained to his leg. The effect of that Gulf Aviation Gas ain't wore off yet.

Garrit Lydecker

Gulf Oil Corporation and Gulf Refining Company... makers of



**GULF AVIATION PRODUCTS**

## Mid-Continent Tells C.A.A. of Intention to Hire Lloyd Stearman

In order to avoid any possible violation of the Civil Aeronautics Act,



Stearman

which the latter will make a survey of the line (AMERICAN AVIATION, Oct. 15).

Section 408(a) (6) of the Act states that it shall be unlawful "for any air carrier or person controlling an air carrier to acquire control, in any manner whatsoever, of any person engaged in any phase of aeronautics otherwise than as an air carrier." Mid-Continent told the CAA that it is not in violation of this section, because Stearman has severed all relations with Stearman-Hammond Aircraft Corp., and is presently described as being "unemployed."

The survey of Mid-Continent's route is to be made by Stearman in order to determine the type of equipment that will be best suited for the immediate future operations of the company. He will also investigate the air mail feeder route possibilities in connection with Mid-Continent.

The contract is for Stearman's "employment including improvements, developments and experiments in the field of aeronautics, including therein such as concern aircraft," and Ryan is to have "an 80% interest in and to all inventions, designs, drawings, ideas, improvements and developments in the field of aeronautics which might result from the efforts of Lloyd Stearman during the aforesaid period of employment."

Under the terms of the one-year contract, Stearman is to receive \$300 per month for the first six months, \$400 for the last six months, and \$500 per month if his services are required for an additional year.

### Crane Heads AFS

Richard T. Crane was elected president and general manager of the Airline Feeder System, Inc., at a meeting of the board Nov. 2 at the company offices, Graybar Building, New York City. F. W. Wiggins was elected executive vice-president, R. B. Winslow was elected treasurer, E. E. Basham was elected vice-president in charge of operations, and Miss Josephine E. Downs was elected assistant treasurer and assistant secretary.

### New WAE Promotion Film

A 30-minute all-color sound movie has been completed by Western Air Express. Titled "Skyway to the Nation's Playgrounds," it shows scenes of the national parks, deep sea fishing, and ranching and mining operations.

### 200,000 WAE Passengers

Western Air Express recently carried passenger No. 200,001, Mrs. Joseph Gibby, wife of a well known Los Angeles artist. During its 12 years of operation, WAE has flown over 60,000,000 passenger miles.

### Personnel

William Lovett Jericho, L. I., and Gordon R. Otis, Fairfield, Conn., graduates of Roosevelt Aviation School, are now with Waco Sales of New York, Inc.

## ARMSTRONG PROMOTED

Succeeds Mehl as Secretary-Treasurer of Eastern Air Lines

Capt. Eddie Rickenbacker, president of Eastern Air Lines, has announced the appointment of Thomas F. Armstrong



Armstrong

as secretary and treasurer of the company, succeeding J. J. Mehl, resigned. Mr. Armstrong started with the company 10 years ago as bookkeeper for Pitcairn Aviation, Inc., predecessor company of Eastern. For some time he has been assistant treasurer.

Warren Moore has been appointed assistant secretary-treasurer. A native



Farley

Moore

of Washington, D. C., he became affiliated in 1934 as statistician with North American Aviation, Inc., of which Eastern was a part until this year.

F. L. Farley has been appointed office manager in charge of accounting. He has been employed by Eastern and predecessor companies since 1929 and is a native of Richmond, Va. He is a graduate accountant of Pace Institute, New York City.

## EAL PROMOTES TWO

E. M. Henning Succeeds Berlin as Miami Traffic Manager

Paul Brattain, vice president in charge of traffic of Eastern Air Lines, has announced the appointment of E. M. Henning as district traffic manager at Miami, and of W. A. Berlin as district traffic manager and field manager at Tampa, Fla.

Mr. Henning joined Eastern in 1933 as machine operator at Atlanta and



Henning

Berlin

later was transferred to New York to fulfill the same duties. In 1934 he went to Miami where he served first as reservation clerk and later as traffic representative. His promotion is the result of Eastern's route expansion.

Mr. Berlin joined Eastern four years ago as traffic representative and for the past three years has been district traffic manager at Miami. He will have charge of traffic out of Eastern's new terminal at Tampa.

John Brooks, former station manager at Wilkes-Barre, Pa., for American Airlines, has been transferred to Buffalo as assistant station manager. George Zoller replaces Brooks at Wilkes-Barre.

## Airline Personnel

Rufus P. Spaulding has been appointed passenger service representative of Western Air Express, reporting directly to Alvin Adams, president.

Miss Lois Adams, secretary in the sales department of American Airlines at Memphis for a number of years, was married Oct. 15 to James M. McKnight of Memphis. Mrs. McKnight will continue her work with American.

Ernest H. Glaeser, senior mechanic in the maintenance department of American Airlines at Chicago, has been promoted to crew chief in airplane overhaul dept.

Newton K. Wilson, supervisor of passenger service for American Airlines, has announced transfer of Stewardess Florence Gale from Chicago to Newark to fill the vacancy at that base created by the resignation of Stewardess Electa Harper who is being married in November.

Therrald Kroyer, Jr., former meteorologist and chief weather forecaster for the U. S. Army Air Corps at Selfridge Field, Mich., has joined the meteorology staff of American Airlines at Chicago. He will be transferred to the Newark base after a period of training.

To supervise aircraft radio maintenance over the entire American Airlines system, Stanley Irwin has been appointed supervisor of radio maintenance. He will be based at Newark. Irwin has been handling radio maintenance at Newark for American for seven years.

Hugh B. Johnson, acting chief mechanic for American Airlines at Cleveland, has been promoted to chief mechanic at that base by J. F. Martin, superintendent of maintenance. He replaces T. J. Healey who was transferred to Chicago. Cleveland has been placed in the Chicago sector for technical supervision by the maintenance supervisor of that area.

Edgar C. Penney, station manager for Pennsylvania Central Airlines at Saginaw, Mich., has been transferred to the radio division at Detroit. John H. Tischler has been transferred from Buffalo to Saginaw as station manager.

The engagement of Miss Helen Elizabeth Moseley, TWA stewardess of West Orange, N. J., and Edwin J. Ahrens, dispatcher and pilot of Airline Feeder System, has been announced. The marriage will take place early in 1939.

Miss Dorothy Denton, Alton, Ill., TWA hostess, has become the bride of Albert W. Heath, TWA pilot.

W. C. "Joe" Ables, Boeing School graduate and formerly field manager for United Air Lines at San Diego, Burbank and Oakland, has assumed his duties as new field manager for UAL at Seattle.

Frank E. Caldwell, former director of dispatch for United Air Lines, has been appointed investigator for the Air Safety Board of the CAA.

## Latest Grid Scores

American Airlines stewardesses now are handed latest football scores at each stop on grid playing days, and the information is relayed to interested passengers.

## WELSH PROMOTED

With TWA 9 Years, Made Supt. of Operators

Appointment of S. D. Welsh, formerly superintendent of the western region of Transcontinental & Western Air, Inc., as superintendent of operations for the entire system, was announced by Larry G. Fritz, recently elected vice-president in charge of operations. Welsh has been with TWA for nine years.

Under the reorganization, the division heads are as follows: Atlantic (Newark to Pittsburgh), H. H. Gallup with headquarters at Newark; Eastern (Pittsburgh-Kansas City), J. A. Collings, with headquarters in Chicago; Western (K. C. to Winslow) A. D. Smith, headquarters Albuquerque; Pacific (Winslow to Phoenix, Los Angeles and San Francisco), L. W. Goss with headquarters in Los Angeles. H. G. Andrews, assistant superintendent of the Pacific division, will base in San Francisco.

## AA Apprentice Program

Following a program of apprentice training suggested by the Air Line Mechanics Association, American Airlines will shortly put such a plan into practice. Joseph Healy, formerly maintenance supervisor for the Cleveland district of American, has been appointed superintendent of apprentice training with headquarters in Chicago.

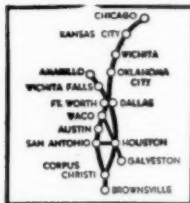
## American Sets Another Mark

American Airlines carried 24,436 passengers in and out of New York during October, the largest number of air passengers ever reported by its New York division. This was a gain of 63% over the 14,992 persons carried during October, 1937, and an increase of 11% over the 22,951 reported during September, 1938, previous high record month.

## Engine Installations Proceed

Cheyenne, Wyo., Nov. 3.—Eleven of United Air Lines' DC3's have been equipped with new 1,250-hp. Pratt & Whitney twin row Wasps and 14 more will be taken to the shops for similar installations before the end of November, according to William P. Hoare, superintendent of shops and maintenance. When the present project is completed only 12 Mainliners will have the older motors. At present, 80 men are working on the new engine mounts at local shops.

## SUMMER LINGERS ON in Texas!



Under a brilliant autumnal sun and blue south western skies folks are golfing daily—or tumbling gaily in the white crested surf on the Texas Riviera from Galveston to Brownsville—or getting their limit of ducks, quail and doves in a land where no Arctic breeze whistles through the blind! Makes you want to go, doesn't it? Well, come on, it's only a few hours away on



**BRANIFF**  
DOUGLAS

*B. Liners*



## A Stewardess 5 Years



Kathleen Kay, American Airlines stewardess who has flown more than a million and a quarter miles, is shown receiving a five year service pin from F. L. Duncan, Los Angeles flight superintendent. She is a native of Grosse Ile, Mich., and flies between Glendale and Dallas.

## Aviation Pin Exhibit

A collection of 250 aviation pins representing all scheduled airlines now operating in the U. S., North, Central and South America, England, Europe, Asia, China, Africa and the Hawaiian Islands is touring American Airlines offices in leading on-line cities. The exhibit represents the hobby of American's Capt. Walter Brooke. Many private flying club and military emblems are included.

## Hobbs to Huntington

G. W. Hobbs, former station manager at Providence, R. I., for American Airlines, has been transferred by the company to the newly opened Huntington, W. Va., airport. Service was inaugurated there Sept. 25.

## "Prof." Pollet

Max Pollet, district sales manager for American Airlines at Buffalo, N. Y., has started a series of lectures at the University of Toronto in the Canadian city. The lectures are on airline operations and are part of the regular engineering course. There are 20 students and Pollet is the only American lecturing on this particular subject in the school. While his lecturing is not part of his work for American, Pollet feels it will bring about better relations between the two countries as far as aviation is concerned.

## WAE Signs With CIO

Los Angeles, Oct. 29—A 5-year contract with the American Communications Association (CIO) has been signed by Western Air Express recognizing the union as sole collective bargaining agency for radio operators employed by the company. Provided are: seniority rights, 8-hour day and 6-day week; time and a half for overtime; seven holidays a year, with time off for those working; two weeks vacation with pay per year; two weeks notice before discharge; 5¢ a mile for operators using own cars on the job; organization of a grievance committee.

## Clippers to Carry 50

The Boeing Clippers to be used by Pan American for trans-Atlantic service next spring will accommodate 50 passengers, Sydney D. Smith, New York traffic representative for PAA, has announced. "We shall make one or two 'shakedown' trips to Europe to test the craft before starting regular service," he said. The Clippers are built to carry 74 passengers.

## Informal Pose



Ray Miller, chief engineer for American Airlines, Glendale, Calif., caught by the camera at the nose of an AA Flagship.

## Canada Lowers Rates

Edmonton, Nov. 1—Following many protests from northerners over "prohibitive" second class airmail rates, the Canadian postal department today reduced the rates to 1c per two ounces or fraction. Reductions apply to northern points on newspapers and magazines "where there is no alternative mail service." Rates recently put in effect were as high as \$1.40 per lb.

## PCA Hits New High

Pennsylvania Central Airlines during October (best month in history) carried 9,981 passengers, or a gain of 6.93% over September, and 33.15% over October traffic a year ago. The daily average was 322 passengers, J. J. O'Donovan, vice-president in charge of traffic, reports. Advance reservations indicate business through November will be held. Detroit traffic led that of other cities on the line, with 2,173 passengers.

## Airline Meteorologists Standardize Procedure

Standardization of meteorological procedure and forms used by meteorologists of the various airlines was discussed at the recent meeting of the Meteorological Committee of the Air Transport Association at Cambridge, Mass. General agreement on altitudes of airports was recommended, the figures to be decided by actual survey. The Weather Bureau heretofore has provided such data at stations where mercurial barometers have been installed, and the assembly will seek to have all stations included.

It also planned to consolidate instruction at terminals where several airlines have meteorological employees. The committee has developed three charts now adopted as standard by the airlines for plotting the six-hourly weather map.

Members who attended were Mr. Minser, chairman; J. J. George, Eastern Air Lines; R. L. Currie, American Airlines; L. L. Scruggs, Chicago & Southern; L. A. Sykes, Penn-Central; and W. E. Howell, Mid-Continent Airlines.

## K. C. Meteo's Elect

E. J. Christie has been appointed chairman of the Kansas City seminar of the American Meteorological Society, which last met on Sept. 14 in the Missouri metropolis. J. H. Aldrich is secretary-treasurer; E. J. Minser is first vice-chairman, and W. E. Howell was elected 2nd vice-chairman. The group is beginning its fifth year as an active unit of the A. M. S. Meetings are held fortnightly at the University of Kansas City. Mr. Minser is chief meteorologist for TWA.

## First-Class Mail by Air Faster Than Telegraph After Hurricane

Ordinary first-class mail, carried by airplane out of Newark for the first time, was more rapid than telegraph immediately after the New England hurricane, according to J. C. Young, assistant superintendent of air mail service, New York City, who added that the airlines performed "a task unparalleled in the history of commercial aviation." Young, in a letter to C. P. Graddick, superintendent of air mail, revealed for the first time the manner in which the emergency mail was handled by the airlines, and the cost to the Post Office Department.

Between Sept. 22 and Oct. 1, a total of 147,208 lbs. of mail was carried on 121 trips between New York and Boston, and 100,733 lbs. on 74 trips between Boston and New York. Total cost of the temporary service to the Government was \$5,314.98.

On Sept. 22, Young asked the airlines for bids to carry ordinary mail during the emergency. Lowest bid was submitted by Eastern Air Lines at 39¢ a mile on a round trip basis for carrying a load not to exceed 4,500 lbs. The company operated two round trips and will receive \$340.08. On the morning of Sept. 23, American Airlines which, due to a misunderstanding, had not quoted a price the previous day, submitted a bid of 35¢ for 4,500 lbs., and handled the mail from then until Oct. 1. Eastern, United and TWA furnished equipment and personnel for use during the period.

"It might be of interest to know that on Sept. 24 American Airlines had

in transit nine tons of mail at the same hour on ships going to and returning from Boston," Young stated. American will receive \$4,974.90 for the Newark-Boston service. It also transported 27,000 lbs. between Albany and Boston at the 35¢ rate.

"It became evident early on Sept. 23 that to hold a plane for a load of 4,500 lbs. would interfere with the distribution of the equipment and the temporary schedules set up by American," Young said. "All available planes and pilots were assembled at Newark to maintain a schedule of departure every 15 minutes. We entered into an agreement with American to handle in available space in any plane operating, all ordinary first-class mail that could be accumulated for any trip, the weights to be pooled for the departing times at Newark and the carrier to be paid at the rate of 35¢ a mile for each 4,500 lbs. The ordinary mails for the New England states began to flow from New York to Newark on every train, connecting with the first plane departing for Boston or Providence."

The United States Treasury Department, in providing currency for the stricken area, shipped 99 registry pouches by plane to the Federal Reserve Bank, Boston. A total of \$37,000,000 was included in shipments, according to one airline representative.

Only mails not handled by plane during the hurricane were bulky packages, papers and parcel post. These were sent by boat from New York to Boston.

## Supplied by Friez

**FIRST** commercial service for upper-air transmitters of temperature, pressure and humidity . . . by Radio from field level to the stratosphere . . . The Friez Ray-Sonde • **FIRST** to offer the Aircraft Flight Analyzer—a complete Flight Log Recorder

Refer your weather problem **FIRST** to

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now in use by many foreign and domestic airlines. **FIRST** to develop ideal airport weather assemblages. **FIRST** to offer a complete range of Weather Instruments . . . wind, temperature, humidity, flight barographs, and upper-air recorders of all types.

## UAL Asks Mail Pay on Pound-Mile Basis; WAE, PCA Want Higher Rate

CAA Receives First Petition for Payment on New System as United Suggests 1.32 Mills for Combined Routes

The first request for air mail payments on a pound-mile basis was made to the Civil Aeronautics Authority on Oct. 27, when United Air Lines asked for a hearing to determine fair and reasonable mail rates on routes 1, 11, 12 and 17. AM1 operates between New York and San Francisco, AM11 from Seattle to San Diego, AM12 from Salt Lake City to Spokane, and AM17 from Cheyenne to Denver.

Western Air Express and Pennsylvania-Central Airlines also filed petitions for substantially higher rates, but stuck to the old mileage basis in submitting their estimates.

Stating that during the year ended June 30, 1938, it sustained an operating loss of \$1,308,077.23, United's petition asked payment of 1.08 mills per pound-mile on AM1, 2.46 mills on AM11, 2.16 mills on AM12, and 1.04c on AM17. For all routes combined, payment should be 1.32 mills, the petition said.

If heavy mail loads require extra sections, payment should be at the pound-mile rate plus 80c per aircraft mile flown on the return trip of such extra section to point of origin, "otherwise than on a regular schedule of petitioner, less, however, the amount of passenger revenue and estimated express revenue obtained by petitioner from the operation of return trip of such extra section."

On AM1, United now receives 31c per mile on a base mileage of 500,000; on AM11, 27c with 170,000 base mileage; on AM12, 33-1/3c with 60,000 base mileage, and on AM17, 29c with 25,000 base mileage. The company, which carries 33% of the total air mail but receives only 23% of the mail pay, contends that a carrier's compensation should be measured by the amount of work performed, and that the pound-mile is the best yardstick.

Transportation of passengers provided 59% of United's revenue from its four routes for the year ended June 30, 1938. Total revenue was \$9,175,080.21, passengers providing \$5,428,615.95, mail \$3,320,823.35, and express \$425,640.91. Current assets at the end of the year were \$4,222,356.03, against current liabilities of \$1,263,946.61. The book value of real property and equipment was \$5,835,153.30.

Western Air Express, which operates AM13, Salt Lake City to San Diego, and AM19, Salt Lake City to Great Falls, asked the C.A.A. to set rates of 43c and 50c per mile, respectively, for the two routes. Payment would be for loads not exceeding 300 lbs., with the further provision that rates shall be increased 10% for each additional 100 lbs. or fraction thereof.

WAE's present rate on AM19 is 33-1/3c with base mileage of 33,000 miles, but the company states that it is flying from 60,000 to 65,000 miles a month, with the result that the rate actually received varies from 31-1/3c to 33-1/3c. On AM13, a proceeding is now pending before the Interstate Commerce Commission to increase pay from 28-1/3c to 30c, and base mileage from 45,000 to 134,000. Such a rate will still not be fair and reasonable, the company states.

The income derived from mail, "together with all other revenue of the petitioner, is not adequate to pay the operating expenses of the petitioner . . . and does not pay any return on the value or cost of facilities and property owned and used by the carrier for the purpose of said transportation and

services, or carrier's investment therein," WAE's petition stated.

Operating losses on AM19 since 1934 have been not less than \$50,000 a year, and on AM13 since 1936 have been in excess of \$65,000. "Such losses are exhausting the working capital and resources of the petitioner, and unless prevented they will result in destruction of its credit and make it impossible for it to perform adequately its services," Western Air said.

Penn-Central, which operates AM14, Norfolk-Detroit; AM32, Detroit-Milwaukee and Grand Rapids-Chicago; AM34, Washington-Buffalo; and AM-41, Detroit-Sault Ste. Marie, asked that all schedules, including those now on a weight-credit basis, be paid at the rate of 38¢ per mile for loads of 300 lbs., with a 10% increase for each additional 100 lbs. PCA now gets 33 1/3¢ on all routes except AM34, which is paid at the rate of \$.0000008 per mile.

Until such time as a fair and reasonable rate is set, PCA asked for "temporary and immediate relief" by payment of 33 1/3¢ on AM34, and similar payment for its four weight-credit schedules. For the year ended June 30, 1938, the company sustained a net loss of \$43,106.68.

### Trans-Canada Operating Largest Lockheed Fleet

Montreal, Oct. 3—Trans-Canada Air Lines, which began regular air mail and express service between Winnipeg and Vancouver Oct. 1, announces that it owns the largest fleet of Lockheeds in the world. The 15 modern planes cost \$1,516,660. All have been delivered. Ten are equipped for 10 passengers, two pilots and a hostess. They are powered with two Pratt & Whitney 850-hp. Hornets, and are capable of 250-mph. The other five planes have a 210-mph. top speed. Daily experimental flights are in progress between Winnipeg and Montreal. In addition to the main route between Winnipeg and Vancouver via Regina and Lethbridge a branch service is in operation between Lethbridge and Edmonton. Calgary will be added on this route when the field there is improved.

### Move to Enlarge S. F. Port

San Francisco, Oct. 29—The board of supervisors has authorized the city to acquire by condemnation 202 acres of tidelands adjoining municipal airport on the east.

### In St. Louis

AIR-CONDITIONED ROOMS FROM \$2.50

**MELBOURNE**  
HOTEL  
Where Lindell Crosses Grand

PHONE YOUR RESERVATIONS FROM  
THE FIELD JEFFERSON 6980



### Try Out New Fog

#### Disperser on Coast

San Francisco, Oct. 26—A chemical compound which its manufacturer claims dispersed fog a few minutes after it was sprayed from a plane was announced today. Jack Rymer, pilot for Maj. William H. Fillmore, operator of a flying service at Oakland Airport, and O. L. Notley, engineer for the manufacturer of the chemical, made the test. E. H. Dimity is manufacturer. The chemical was invented by C. R. Pleasants.

"About 25-lbs. of the chemical is enough to cut a hole 1,000-ft. in diameter from a plane to the ground," Dimity said. "It should prove practical also on ships and at airports to keep a clear ceiling the year around. A public demonstration, with movies to be taken from a plane, will be given soon."

### Slick Wing May Add 40-MPH to Plane Speed

Pasadena, Cal., Oct. 27—Wind tunnel tests on a slick wing section 8-ft. long and 5-ft. wide are in progress at California Institute of Technology's Guggenheim Aeronautical Laboratory here. Top speeds of planes may be increased as much as 40-mph., one spokesman said. The wing, now coated solidly with black lacquer and highly polished, later will be tested with false rivet heads and other surface obstructions of various types. Dr. Clark B. Millikan, associate professor of aeronautics, is in charge of experiments. Tests will continue through the winter.

### Airlines Charter Service

#### Names Mason Sales Director

Boston, Oct. 30—Airlines Charter Service has appointed as sales and publicity director, George Mason, recently of United Air Lines' publicity staff in Chicago, and formerly vice-president of the NAA, aviation editor of *Boston Transcript*, and general manager of Shobe Airlines at Boston airport. "Mason will formulate and execute a long-range sales and promotional program for our fixed base aircraft operators in every part of the country. B. E. Cole, president of the service, said. "By augmenting the function of the scheduled airlines, our charter service offers air service to more than 2,000 cities in the country. We are already expanding our operations policy to further increase this scope."

### Germans into Ecuador

The Ecuador government has agreed to pay the German Sedta Aviation Co. a subsidy of 60,000 marks and \$15,000 to aid in establishing a commercial air service, according to a *New York Times* cable Oct. 30. Germany has promised to establish a 6-day passenger and air mail service with Germany in addition to a weekly service between Quito, Bogota and Lima.

### Special Flights

The Navy's new 4-motored Consolidated patrol boat on Oct. 28 completed a 13-hr. 55-min. non-stop flight from San Diego to Washington, D. C. Motors are 900-hp. Pratt & Whitney. Hamilton Standard controllable pitch propellers are used.

Lewin Barringer on Oct. 25 claimed a new American sailplane altitude record of 9,000-ft. near North Conway, N. H. The old record was 6804-ft. set by Richard C. du Pont. Barringer was towed by a plane to a height of 2,500-ft. Johnny Crowell, Charlotte, N. C., reported making four outside loops in 55 seconds on Nov. 2.

Flying a fully loaded Curtiss P-36 pursuit ship with a liquid cooled motor, Lieut. Benjamin S. Kelsey, Army Air Corps, on Oct. 26 made the 360-mile Dayton-Buffalo trip in 61 minutes. A tail wind of about 65-mph. aided.

## What Makes An Airline Great?

The greatness of an airline is measured by its service to the traveling public. The following excerpts, selected at random from unsolicited letters from persons who use TWA service, indicate some of the reasons why TWA is a great airline.

\*\*\*\*\*

**SERVICE**—"I had a very pleasant trip into New York and had a chance to appreciate for the first time the very good service you have, reliability in your ships and pilots, the comfort, and I really wish to make a special mention of the very good service on board."

"I want to say that the extreme courtesy and interest of the TWA personnel on both flights was epic. . . . I have flown on foreign planes, but I consider the whole spirit and efficiency of TWA something unusual."

\*\*\*\*\*

**SAFETY**—"I am heartily in favor of the established policy of TWA to lean towards the side of safe transportation."

"I appreciate the fine manner in which your organization operates and the care you take in such operation."

\*\*\*\*\*

**EQUIPMENT**—"Your planes are the last word in comfort and leave nothing to be desired."

\*\*\*\*\*

**COURTESY**—"The courtesy of your personnel far exceeded that which I have experienced in other modes of travel."

**TRANSCONTINENTAL & WESTERN AIR, INC.**





## The C. A. A. Record

(Applications, Hearings, Dockets)

### APPLICATIONS

#### WAE Files for Canadian Link

The CAA has received application from Western Air Express for permission to operate passenger service between Great Falls, Mont., and Lethbridge, Canada. WAE intends to provide a direct connection with Trans-Canada Air Lines, and with MacKenzie Air Service and United Air Transport for United States-Alaska service via Edmonton, Fort St. John and Whitehorse.

#### Mid-Continent Asks Night Operations

Mid-Continent Airlines has filed application with the CAA for authority to institute and maintain scheduled airline service for the carriage of mail, passengers and property during the hours of darkness, over Sac City, Iowa, to Omaha, Neb., via Sioux City, Iowa. Applicant's request is based upon the time when the proposed lighted airway on the direct route between Omaha and Minneapolis via Sac City, which is already under construction, is completed and functioning, and when night operations are authorized between Omaha and Minneapolis. Mid-Continent requests that a night stop at Sioux City be authorized, as the airport at that city is to be lighted immediately.

#### Inland and Mid-Continent Asks Pay Increases

Inland Air Lines has asked the CAA to set 35c per mile as the base rate on air mail route 35, from Huron, S. D. to Cheyenne, Wyo., stating that the present rate of 19.875c is not fair or reasonable. The company had a net loss of \$24,662.66 for the fiscal year ended June 30, 1938, and expects a loss of over \$30,000.00 for the six months ending Dec. 31, 1938. Inland states that its route is over sparsely settled communities with limited purchasing power, and that there is no indication that passenger traffic will increase.

Mid-Continent Airlines, which now receives 33 1/4c per mile on a base of 67,000 miles, has stated that the fair and reasonable rate for AM26, Minneapolis-Omaha-Tulsa-Bismarck-Huron, is 40c per mile, with the same base mileage.

### HEARINGS

#### Inter-Island Airways Hearing

Certificates of convenience and necessity and approval of interlocking relationships were sought by Inter-Island Airways at a hearing before Examiner R. J. Bartoo on Nov. 5. S. C. Kennedy, president, stated that his company carried 14,058 passengers between May 14 and Aug. 22, the "grandfather" period, and flew 99.9% of its scheduled mileage, of which 98.4% was completed on time. Inter-Island now operates three S-43 Sikorsky amphibians and two S-38's. A fourth S-43 has been ordered at a cost of \$140,000, and is scheduled for delivery in March, 1939.

Inter-Island Steam Navigation Co., Ltd., of which Kennedy is also president, owns 88% of the airline's stock, and the airline holds 6,712 shares in the navigation company. Inter-Island Airways seeks approval of the interlocking relationship on the grounds that it is not adverse to the public interest. All stock in the airline was offered to the public nine years ago, but lack of buyers forced the navigation company to assume control, according to Garner Anthony, counsel for Inter-Island Airways.

#### Hearing Held on UAL Application

United Air Lines appeared before Examiner F. W. Brown of the Civil Aeronautics Authority, on Oct. 27 seeking certificates of convenience and necessity under the "grandfather" clause on routes between Newark and Oakland, Seattle and San Diego, Salt Lake City and Seattle, Pendleton and Spokane, Denver and Cheyenne, Seattle and Vancouver, Cleveland and Newark and Camden and Allentown. P. M. Wilcox, secretary of United, testified that of 2,000,000 shares authorized, the company had 1,441,920 issued and outstanding on May 14, and 1,447,785 on Aug. 22. Of 23,000 shareholders, 350 holding 25,000 shares live outside the United States. W. A. Patterson, president, stated that 99.24% of the company's scheduled mileage was flown between May 14 and Aug. 22. Robert I. Hazen, CAA senior air carrier inspector, testified that United's service has been adequate and efficient.

#### Delta Air Corp. & National Airlines

CAA Examiner F. W. Brown on Oct. 26 heard Delta Air Corp. ask for a certificate of convenience and necessity on its route between Charleston, S. C., and Fort Worth, Tex., via Columbia, Augusta, Atlanta, Birmingham, Meridian, Jackson, Monroe, Shreveport, Tyler and Dallas. National Airlines appeared before Examiner L. Jordan on Oct. 29, seeking the same type of certificate for routes between Jacksonville and Lakeland, Fla., Jacksonville and New Orleans and Daytona and Miami. Both carriers went through the usual procedure of proving that their service had been adequate and efficient between May 14 and Aug. 22, 1938, the "grandfather" period, and that their officers and directors are citizens of the United States.

#### Continental Application Heard

Examiner A. G. Nye of the CAA on Oct. 10 heard Continental Air Lines' application for a certificate of convenience and necessity for AM29, Denver-Albuquerque-El Paso. Robert Six, president, testified for the applicant and stated that the company had continuously operated the route between May 14 and Aug. 22, 1938, the "grandfather" period. Stops were not made, he said, at Trinidad, Col., or Las Vegas, N. M., because the airports were not large enough for the Lockheed 12's operated by his company. Service will be resumed as soon as the fields are approved by the CAA. Robert I. Hazen, CAA senior air carrier inspector, testified that Continental's service during the "grandfather" period was adequate and efficient.

#### TWA Application Contested

In a hearing before Examiner C. E. Leasure for certificates of convenience and necessity, TWA, due to an unusual wording in its application, is encountering opposition from three airlines. The hearing, some parties contend, is a test case of the Civil Aeronautics Act. TWA has asked certificates on routes from Newark to Los Angeles, Newark to San Francisco, Newark to Phoenix (via Kingman and Prescott from Las Vegas), Phoenix to Los Angeles (via Prescott, Kingman, Boulder City and Las Vegas), and Phoenix to San Francisco. The opposition was caused by the following statement in the application: "Such certificates to authorize such services between the terminal points named

and each intermediate point, direct service between any terminal and any intermediate point, and direct service between any intermediate point."

Gerald Brophy and George Spater, counsel for TWA, have repeatedly denied that the proposed set-up permits any operations not authorized by the Air Mail Act of 1934. On the other hand, the intervenors, United Air Lines, Western Air Express and American Airlines, contend that approval of TWA's application will allow that company to operate new routes not in existence between May 14 and Aug. 22, 1938, the "grandfather" period, and would greatly increase the possible operations of all U. S. airlines. With the advent of the four-engined Boeings, the applicant will be authorized to fly non-stop direct from Chicago to the west coast, the intervenors state.

Western Air Express is protesting TWA's stop at Boulder City on its Los Angeles route, claiming that the stop is not in the interest of public convenience and necessity, inasmuch as WAE operates into Las Vegas.

Senator William H. King (Dem.-Utah) appeared at the hearing and stated that his constituents oppose TWA's Phoenix-Las Vegas operation insofar as it may interfere with the eventual establishment of a feeder line from Phoenix to Salt Lake City.

Clarence Fleming, mail-traffic manager, and F. G. Wilson, vice president-treasurer, testified for TWA, while Alvin P. Adams, president of WAE, appeared for his company. The following lawyers were present: H. O. Hale, American; Jack Wynne, WAE; P. M. Godehn, UAL; and Samuel Gates, CAA. The hearing adjourned Nov. 10 and will reconvene Nov. 16.

### ORDERS

#### Passes for Officers and Employees

Temporary Regulation 403-B-1. Until the CAA prescribes more definite rules, air carriers may issue or interchange tickets or passes for free or reduced-rate transportation to any director, officer or employee, or their immediate families, or any air carrier; witnesses or attorneys in hearings in which the carrier is involved; persons injured in aircraft accidents, and physicians and nurses attending them; and any person or property with the object of providing relief in cases of general epidemic, pestilence or other calamitous visitation; and in the case of overseas or foreign air transportation, to such other persons as under like circumstances commonly received free or reduced-rate transportation from such carrier during the period from June 23, 1938, to Aug. 22, 1938, in accordance with the rules, regulations or other established practices which such carrier then had in effect.

#### Calendar of Hearings

Oct. 24—Pacific Alaska Airways, certificate of convenience and necessity. Continued on Nov. 7.

Oct. 25—Marquette Airlines, certificate of convenience and necessity. TWA present as intervenor. Continued on Nov. 16.

Oct. 26—Delta Air Corp., certificate of convenience and necessity.

Oct. 27—United Air Lines, certificate of convenience and necessity.

Oct. 28—TWA, certificate of convenience and necessity. United Air Lines, American Airlines, Western Air Express present as intervenors. Cont. on Nov. 9.

Oct. 29—National Airlines, certificate of convenience and necessity.

Nov. 5—Inter-Island Airways, certificate of convenience and necessity, and approval of interlocking directorates.

Nov. 10—Continental Air Lines, certificate of convenience and necessity.

Nov. 12—Inland Air Lines, certificate of convenience and necessity.

Nov. 14—A. Garni, application to become director of Eastern Air Lines.



Like all airlines, working in close cooperation with equipment manufacturers, United is devoting every possible effort to the continued technical advancement of air transportation.

We are proud that our engineers, along with those of the Bell Laboratories and Western Electric, have participated in the successful development of the Terrain Clearance Indicator which promises to add still further to the present efficiency of airline operation.

This is another important contribution to increased safety—another development to add to the many achievements of the entire aviation industry in this country.

The engineers of the airlines and the equipment manufacturers should receive well-deserved credit for these achievements.

*W. A. Patterson*

PRESIDENT, UNITED AIR LINES

## Bright Future Seen for Rotating Wing Aircraft at First Meeting

Dorsey Bill Expected to Provide Impetus, Puts U. S. on Par With Foreign Countries; Helicopter Said to Be Final Answer

More than 200 persons attending the world's first rotating wing aircraft meeting at Franklin Institute, Philadelphia, Oct. 28-29, heard 18 engineers and experts predict a bright future for autogiros, gyroplanes, convertiplanes and helicopters, and express the general opinion that the latter type machine, with its power-driven blades, is the "final answer."

General consensus among the engineers at the meeting, which was sponsored by the Philadelphia chapter of the Institute of the Aeronautical Sciences, was that Europe is far ahead of the United States in developing all types of rotating wing aircraft, but that the \$2,000,000 provided in the Dorsey bill, passed at the last session of Congress, will materially aid progress in this country. The conference was also cheered by the news that the Civil Aeronautics Authority has asked for \$400,000 of the \$2,000,000 and intends to investigate thoroughly and test rotating wing craft.

Dr. Alexander Klemin, professor at the Daniel Guggenheim School of Aeronautics, New York University, at a regular meeting of the Franklin Institute on Oct. 27 stated that rotating wing aircraft "was apparently the very final step in man's conquest of the air as far as flexibility and ability to achieve anything more than nature has achieved with bird and insect." The ordinary airplane, he said, could not hope to equal the stability and safety features of the so-called "windmill" planes, but also said that "there is not the slightest chance that the airplane will be in any way outmoded by rotary wing craft."

Much of the discussion at the meeting centered about the helicopters invented by Louis Breguet of France and Henry Focke of Germany, and the gyroplane of Raoul Hafner, English engineer. Hafner, who came from England for the meeting, told the group that he is working on a small two-place cabin gyroplane "which should be popular for private use." He is also developing a helicopter with a single rotor, which he hopes will attain a top speed of 210-mph. and a rate of climb of 3,800-ft. per min.

W. Laurence LePage, of Philadelphia, who studied foreign developments on a recent trip abroad, read papers from Breguet and Focke. Breguet, who has invented a helicopter with two rotors, one above the other, is of the opinion that that type machine will be the ship of the future, LePage stated. Focke's helicopter climbs 660 ft. per min. and cruises at 97-mph. His machine is capable of vertical take-off with wheels blocked and can hover stationary a few feet off the ground.

E. Burke Wilford, of the Pennsylvania Aircraft Syndicate, said that in 1937 there were 39,500 fatalities due to automobiles and buses, 5,500 caused by railroads and 349 by airplanes, excluding military and student flying. It took the railroads 50 years to attain comparative safety through the development of an adequate signal system, steel coaches and air brakes, Wilford stated.

"The question is," he concluded, "will the American public and the CAA allow the inherent safety requirements of aircraft to take 25 years? We must develop some commercial machine that is inherently safe before production and public acceptance can

go hand in hand. My hunch is that the airlines will require inherent safety by 1945 due to the necessity of earning power. It will only be possible to reach—for private aircraft—a \$2,000 mass production figure when a machine capable of really safe cross-country flights is developed. This must of necessity be of the rotary wing type."

The future aim of rotary wing experts should be to increase aerodynamic efficiency, and reduce weight and parasitic drag, H. H. Platt, consulting engineer of New York, said. "If the structure is cleaned up," he stated, "speed may eventually surpass that of the airplane."

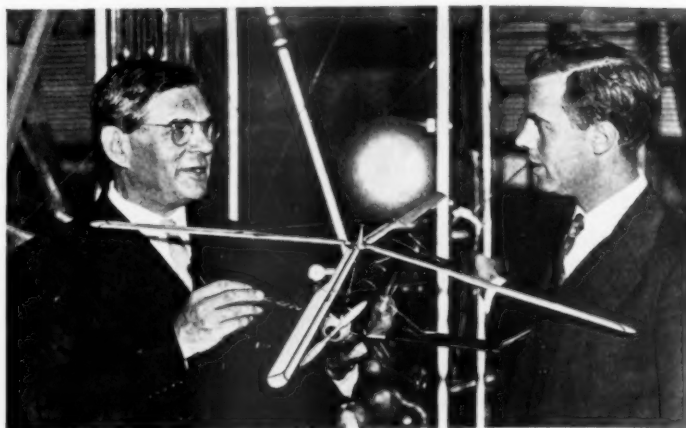
Representative Frank J. G. Dorsey, author of the Dorsey bill, discussed the government's participation in the rotary wing field, and added "The first mail planes carried only mail and their pilot—so will the first mail giro. It seems fair to argue from analogy that transport service will grow from this same beginning. The rotary wing aircraft industry now has three markets to cultivate—precisely the same wide scope which is open to the airplane makers; that is, the military and civil procurement programs of the government, and air mail service and the restricted but growing private market. If rapid development and the evolution of a substantial business enterprise and a national scientific resource do not result, the blame cannot lie with Congress."

Edward J. Noble, chairman of the Civil Aeronautics Authority, was guest of honor at a banquet Friday night, Oct. 28, at the Penn Athletic Club. "My brother and I have in our little hangar at the Thousand Islands 6½% of all the revolving wing civil aircraft at present licensed to fly in the United States," he said "We own just two, and they're seven years old. . . . Yes, there are actually under civil license only 33 revolving wing aircraft in the United States today."

"Already, in official exploration in this field, we have learned that there is a gap in our official knowledge of what you are doing in the rotating wing field. You know that there is a whole chapter in the Civil Air Regulations left blank for the writing of requirements for safely in revolving wing aircraft. . . . I am happy to tell you that we have applied for funds totaling \$400,000 in order to help you. If that money is granted us, and we have every reason to hope that it will be, our experts intend to purchase several of the new rotary wing aircraft now available, both here and abroad, if we can. Our people will fly those planes, one against the other. . . . Out of that examination we believe will come the missing chapter on the airworthiness of the rotary wing airplane in the Civil Air Regulations."

Other talks were given at the meeting by Richard H. Prewitt, Kellett Autogiro Corp., who discussed how certain defects in the KD-1 autogiro were overcome; Gerard P. Herrick, Vertoplane Development Corp. of New York, who explained how his ship "converts" from a fixed-wing biplane to an autogiro in the air; A. G. Galloway, U. S. Department of Agriculture, explaining that his agency wants giros with higher speeds and increased payloads; Lieut. H. F. Gregory, Army Air Corps, who reviewed the Army's experience with giros and stated that they

## Rotating Wing Aircraft Proponents



Dr. Alexander Klemin (left), professor of aeronautics of the Daniel Guggenheim School of Aeronautics, New York University, discussing the merits of rotating wing aircraft with Ralph McClarren, assistant associate director of the Franklin Institute during the rotating wing aircraft meeting sponsored by the Philadelphia chapter of the Institute of the Aeronautical Sciences. They are seen in front of the Wright Brothers plane built in 1911, one of the historic exhibits at the Institute. (Photo by Gladys Muller).

"may develop into an extremely useful military instrument," James G. Ray, well-known giro pilot, who discussed commercial uses; Paul E. Hovgard, Curtiss Aeroplane Co., who stated that although the helicopter is the final answer, the autogiro will not become extinct; Dr. Max M. Munk, Washington, D. C., who discussed "High Speed With Safety;" Ralph H. McClarren, Franklin Institute, who reviewed the entire rotating wing aircraft field, and John M. Miller, pilot for the Kellett Autogiro Corp., who talked on piloting technique.

The research programs of New York University, the National Advisory Committee for Aeronautics and Georgia School of Technology were explained by Everett Schaefer, R. A. Bailey and Prof. Montgomery Knight, respectively. Prof. Knight is working on a rotary wing plane which will derive its power from jet propulsion. Air used is compressed by the plane's engine and passed through the blades by tubes. Torque is reduced to a minimum, he reported.

Other speakers at the banquet besides Mr. Noble included Kern Dodge, Grover Loening, Dr. George W. Lewis of the NACA, and Major Carl Greene, Army Air Corps.

Among those who attended the meetings were W. Wallace Kellett, president of Kellett Autogiro Corp.; Ralph G. Albrecht, Pennsylvania Aircraft Syndicate, New York City; H. J. Allinger and B. M. Bowen, E. G. Budd Co., Philadelphia; James B. Brewster, Aeronautical Corp., Long Island; A. Felix duPont, Jr., Wilmington, Del.; George W. DeBell, Fleetwings, Inc., Bristol, Penna.; John Easton, CAA; Major Lester D. Gardiner, Institute of the Aeronautical Sciences; Harold F. Hartney, Senate Air Safety Committee; K. M. Oliver, Automotive Aircraft, Orlando, Fla.; Peter Riedel, German Embassy, Washington; Henry Y. Satterlee, Gyro Associates, Inc., Morristown, N. J.; H. V. Thaden, U. S. Steel Corp.; Fr. von Boetticher, military attache, German Embassy, Washington; K. S. Carter, Lockheed Aircraft Corp., Burbank, Calif.; and C. T. Tibb, Pitzcarn Autogiro Corp., Hothoro, Pa. Many students from Rising Sun Aircraft School, and the Luscombe School were present.

### Board to Settle Dispute

The services of the National Mediation Board were invoked Oct. 7 for the establishment of a board of adjustment to settle the dispute resulting from the release of a mechanic by Eastern Air Lines, according to the Air Line Mechanics Association. The association was recently victorious in a court case arising from the same dismissal.

## State Prohibits Sale of 'Air School' Stock

New York, Nov. 5—Supreme Court Justice Philip J. McCook today issued an injunction permanently restraining Crescent Flying Schools, Inc., from the sale of any securities in New York State, on the complaint of John J. Bennett, Jr., attorney general. Considerable loss to the public would have resulted through stock promotion and soliciting of donations, it was said.

Max Furman, special assistant attorney general, alleged that a stock-selling plan had been started to interest investors in a uniform manufacturing firm which would be operated as a subsidiary of the school to turn out about 25,000 uniforms for members of a civil air defense association which does not exist. Frank Parker is named general manager of the school corporation, and John Castleton is named as an associate. Furman asserted Parker posed as a captain in the Army Reserve Corps, a licensed transport pilot, and as an experienced operator of flying schools. Popular donations from 10¢ up were to be asked from patriotic groups to create an army of reserve pilots.

### Knickerbocker Named

"Knick" Knickerbocker, public relations head and aviation enthusiast, has been named director of aviation activities by the Plaza Hotel, Hollywood, Calif. The hotel's Aviation Club now has ping-pong tables and short-wave radios and has as its purpose the provision of a meeting place and information bureau for aviation personnel of both civil and military aeronautics.

### Walker to Monterey

Monterey, Cal., Oct. 26—Alton B. Walker, Kansas City, today signed a 5-year operating contract with city council specifying maintenance of city airport and payment of 10% of the gross receipts. Walker said he hoped to base here a 5-place Sikorsky amphibian, a Fairchild, and a Cub and Aerona. Fred Kane will take over pilot duties. Charles Ryan, Jr., and Al Norton, former field operators, have terminated all connections.



## Perry Says Tricycle Gear Model N Waco a Success, Will be Continued

The tricycle gear Waco Model N has fully justified its development on the basis of the first year's sales and will be continued as part of the Waco line



Perry

of airplanes, Hugh Perry, sales manager for the Waco company, said in reply to a request for the company's policy on the new model. At the close of a year of selling Waco cabin models, 44% of the sales were of the Model N. This percentage was considered very satisfactory in view of the \$10,000 price of the Model N and the \$6,000 and \$9,000 prices of the other two cabin models. The industry has watched the performance of the Model N closely as an indication of the popularity which the forward nose wheel might have among flyers.

Admitting that it was with some misgiving that his company decided to introduce the N, Perry said it was decided to try out the tricycle gear model in the higher price field since the bulk of Waco's business was in this field at the time and dealers and customers could be held more closely to the company than if an entirely new and different design were attempted in a lower price field.

"The final decision was to make the Model N and Model C duplicates so far as possible and let the N fight its battle against a conventional airplane that was in effect a twin sister. This we felt would give us the truest possible picture of tricycle acceptance by the public.

"While we naturally had faith in the ship before finally offering it in ATC form, I am sure the most optimistic member of our organization was unprepared for the picture we found at the end of the first year, particularly in a bad year for the private flying industry as a whole, and when buyers of quality airplanes were looking with extreme care on any units in which they contemplated an investment of from \$10,000 to \$17,000.

"It is interesting to note that in competition with its sister ship, the N took unto itself over 45% of our volume of the two.

"It is quite evident that many thinking buyers have been willing to substitute 10% of their speed for a potential of 69% saving on ground accidents—that percentage of such accidents being shown to be the result of ground loops, noseovers, and ground collisions due to inability to see objects ahead in the ground position of the conventional airplane.

"Throughout this first year we have repeatedly taken people who have never had their hands on an airplane control, have put them at once in the pilot's seat, and with verbal assistance only have permitted them to take off, fly, and land.

"In so small an industry with such limited sales effort it has naturally been impossible in the first year to show and sell this idea to thousands or tens of thousands who can afford an airplane of this type and who could safely fly it with a minimum of training—people who could be persuaded to use this type of airplane with its simplified ground characteristics who could never be brought to the point of buying and flying a conventional type."

### CAA Orders Waco N

A 4-place Waco AVN8, powered with a Jacobs-285 engine, and equipped with a tricycle landing gear, has been ordered by the Civil Aeronautics Authority for the purpose of testing instrument landing systems, and to assist in the development of ultra-high frequency radio. C.A.A. Administrator Clinton M. Hester said that the plane was being purchased in order to simulate as closely as possible the conditions which the new type of transport planes, equipped with tricycle landing gear, will encounter in making instrument landings. The plane will be equipped with special bonding and shielding throughout, and will have extra space in the radio cabinets and on the instrument board for installation of the experimental equipment.

### 1939 SOARING PLANS

#### 10th Annual Meet to Be Held Next June 24 to July 9

Elmira, N. Y., Oct. 24—The Soaring Society of America, Inc., and the Elmira Area Soaring Corp., have voted to hold the 10th Annual National Soaring Contest at the Chemung County Warren E. Eaton Motorless Flight Facility at Elmira, June 24 to July 9, 1939. As in contests prior to the '38 meeting, all federally certificated gliders and pilots will be eligible to compete.

According to Earl Southee, general manager, 100 gliders and 300 glider pilots can be accommodated. Foreign pilots are invited to compete on an equal basis with pilots of the U. S. In an effort to attract new pilots to the competition, there will be a practice period the week preceding the actual contest, so that novice glider pilots holding only a student certificate may take preliminary flight tests both at the airport and on the ridges, and thus qualify.

The contest will consist of two contests in one. All pilots will be grouped into two classes depending on the type of certificate held. Lower minimum flight requirements for distance, duration and altitude will be made for pilots with "C" certification, higher for the Silver "C" certificates. The point-award system used in 1938 will be used again next year. Special bonus points may be earned by pilots for performances of special merit.

### Connecticut Holds Competition To Select Airport Manager

Hartford, Conn., Nov. 1—Merit examinations will be held here Nov. 19 for applicants to manage the only state-owned airport at Groton. Minimum salary will be \$2,000 a year, and maximum will be \$2,600. The manager will work under the direction of the State Airport Commission, and have control of maintenance, purchasing, policing and air activities. Requirements for applicants are: not less than five years of flying experience, not less than two years of satisfactory full time employment and two years of practical experience in plant management or operation. As a substitute for the two years of plant management, not less than five additional years of actual flying experience may be offered, if the experience has included the responsibility for the supervision of the work of others for at least one year, and not less than two years of full time employment. Applicant must have a state and federal certificate.

### Plane Corrals Wild Horses

Boise, Idaho, Oct. 29—Now they're using the airplane to round up wild horses on Steamboat Ridge! Fred Walts, San Francisco pilot, has been at this job off and on for about two months, it became known today. The "ground crew" comprises eight cowboys and a cowgirl. Walts, employed by the Duncan MacKenzie outfit known as "71" ranch, circles a wide area until he spots horses, then he dives low and drives them toward the corral. The herd has about 1,000 to 1,800 horses and is the last of the Owyhee band of thousands, Walts said. "It may be a shame that another page is being torn out of the book of the old west, but it has to be done. Ranchers can't let these wild mares eat their range," he added. Cowboys said the plane roundup system is the most humane and efficient.

## South Dakota Flyers Set Up Association

Pierre, S. D., Oct. 24—Organization of the South Dakota Pilots Association was completed here yesterday when 30 flyers from all sections of the state met with T. B. Roberts, state aeronautics commissioner, to map plans for an aviation promotion program which will include an annual air show, efforts to promote safety, and an attempt to have a CAA inspector assigned to South Dakota exclusively. At present the state is combined with others for one government field representative.

Kenneth Neville, of Huron, was elected president; Cecil Shupe, Brookings, vice president; Richard Schultz, Watertown, secretary-treasurer. L. M. South, of Winner, and Charles Agaard, Rapid City, were chosen as members of the board of control.

Portland, Ore.—The Aero Club of Oregon has resumed ground school courses here, with each city high school allowed 15 representative students. Instructors are Capt. James Clark and Archie Roth, and Lieut. James L. Meadows. Theory of flight, meteorology, map-reading are included. Local airlines are cooperating.

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## AMERICAN AVIATION

The Independent Voice of American Aeronautics

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## FORTNIGHTLY REVIEW

(Continued from page 1)

Within six months all domestic civil aviation has been centralized in an independent federal agency; within six months the White House has changed from an attitude of mild concern about aviation to an attitude of vital concern; and within six months the military and naval aviation interests have become linked closely with commercial development. Within a short space of time the federal recognition of aviation has been raised from a minor to a major status.

In the extensive plans for expansion of our air defense, commercial aviation will benefit. The airways are to be completed, the airport system strengthened, and pilots and mechanics are to be trained in large numbers. The vast machinery of building a great air force cannot be set in motion overnight; results will not come quickly. But it is clear that we are entering a new era of expansion on all fronts that will place aviation out in the front. For the first time, really, aviation is getting major attention in Washington. There has been much ballyhoo in the past about air defense and about the promotion of aviation, but the ballyhoo has exceeded by far the actual consideration these matters were getting from the sources of power in the capital.

The big news of today is that aviation is moving into high gear. It is no longer a side issue. It is a matter of vital national and international concern. The airplane has made itself felt in many ways and a few nations had the foresight to see it as the one dominating weapon. As one airline president said in a recent advertising message: "The new era of aviation is not coming. It is *here*."

## The Tragedy of Silence

**P**ROBABLY the greatest single need in American aviation today is a strong publicity mechanism operating both within and without the United States. We have pointed out in the past the weakness of our domestic aviation because of the almost complete lack of an information program voicing the needs of civil aviation to the public and to Congress. Over and above this domestic need, however, is the immediate need of a propaganda mechanism sponsored jointly by the government and the aircraft industry directed to foreign countries, particularly to South America.

Call it what you will—information, propaganda, education, public relations or publicity—it all amounts to the same thing. Aviation has something to sell. It should be sold. Big business, utilities, railroads, trade associations—all of these have publicity units functioning with various degrees of effectiveness, all designed to get their particular stories over to the public. Aviation publicity has been scattered, loose-jointed, un-coordinated and without any centralized or expert supervision. Almost every individual company in the industry—manufacturing and transportation—has its publicity man or staff. Some are very good, some are fair and some are, to be mild, very poor. But there never has been a coordinated information service working for the good of all aviation. Public relations has been a neglected field and yet aviation is in large measure dependent upon public acceptance and public good will.

There are four distinct sides to the publicity problem. These are (1) the relationship of the industry toward the public, Congress and public officials (2) the relationship of public-service aviation organizations, such as the National Aeronautic Association, to the public, to Congress and public officials, (3) the relationship of the Civil Aeronautics Authority to the public in the interests of the upbuilding of civil aviation and (4) the relationship of the industry and the government toward our foreign markets. A properly functioning publicity organization should be in existence in each of those four classifications.

Let's discuss these in order. An analysis of air transport public relations shows each company working primarily for itself, each vying for space in the public prints, each telling its own individual story. There is nothing wrong in this; each company should seek to publicize its services to the fullest.

But over and above this, the air transport industry as a whole should have a more adequate voice—and the voice in this instance is the Air Transport Association. The ATA has apparently not had the funds or facilities to maintain an effective publicity department. Colonel Gorrell has apparently not had the time to study out and set up a voice to aid the industry in the public prints. But a great opportunity for a coordinated program telling the public about air transportation—an educational and informative program—awaits the industry. The present move toward a cooperative advertising program is a fine step forward; it should be followed up by a sound publicity program managed by experts, not amateurs.

On the manufacturing side, the Aeronautical Chamber of Commerce serves as an information bureau for the press, but the field has only been scratched. The chamber should be a strong voice for manufacturers and should be in a position to give advice to individual manufacturers who are not publicity-minded. It is truly surprising how little some of the manufacturers know about public relations. There is a great legitimate propaganda opportunity awaiting the manufacturers, both large and small, in giving the public some coordinated information about airplanes, about the economy of flight, about price ranges, about a hundred and one other items which constitute legitimate publicity. We know something of the problems of the chamber; a coordinated publicity program for the manufacturers is not easy to bring about. But the industry will suffer by not being vocal on its common problems. If it complains about actions in Washington, perhaps the answer is the lack of "selling" Washington intelligently on its problems. The public is receptive to aviation; this receptiveness should be turned to good use. We believe many of the manufacturers' problems would be solved by their intelligent vocalizing.

Under (2) we have public-service organizations which include the N.A.A., the Interstate Airways Committee, the National Association of State Aviation Officials and the great many other units, large and small, that grow like mushrooms and more than often disappear from the scene after a short existence. Strange as it may seem, there is not today—nor has there ever been—a professionally-operated publicity mechanism to speak to the public and Washington about the problems of civil aviation.

This task belongs primarily to the N.A.A. because it was established to represent the public interest in civil aviation. What is needed most is a spokesman not influenced by any passing political administrative group who can function in numerous ways: before public gatherings, before Congress, before the CAA, on the radio and in the public prints. What couldn't be done through the medium of magazine articles, of newspaper stories, of public appearances, if there were one outstanding spokesman who could forge into the front dynamically in the same way as leaders of other industries and groups! It seems appalling that the most dramatic and vital event in history—flight—is lacking in spokesmen who can arouse the interest that is so greatly needed for its advancement.

Next under (3) comes the CAA. Congress has made possible a greatly enlarged federal information bureau for civil aviation. We believe progress is being made toward a government educational program directed to schools and to the public. A vast educational program awaits the bidding of the Authority. The interest of the public in flying can be awakened in large measure to a legitimate educational and publicity program directed from the CAA.

Last but certainly not the least important propaganda mechanism needed today is one directed toward our export markets. Great Britain and Italy are particularly effective in their propaganda with Germany not far behind. The encroachments of the so-called Fascist countries into the South American aviation market (even transportation) presents a critical challenge. Virtually all of the European aviation penetration is accomplished by the respective governments, which indicates that our own manufacturers should join with the U. S. government in projecting an information service reaching every nation which constitutes an active and potential market. The only propaganda efforts from the U. S. in South America at present are those of Pan American Airways and individual companies; this is not enough. If Pan American is to be protected and if our manufacturers are to be safeguarded from dumping of European planes at any price, the federal government should launch a vigorous program with the aid of the industry. The warning of Irving Taylor, chief of the automotive-aeronautics trade division of the Department of Commerce, is crystal clear. The foreign problem is beyond the ken of individual companies; it requires government cooperation and aid. The time to start is now and not after foreign navigation systems, foreign accessories and foreign equipment have penetrated throughout South America. In this venture the CAA, now more closely allied than ever with national defense, can participate.

Let's have spokesmen who can tell an effective selling story. Aviation is the greatest show on earth and it is time it has coordinated and skillful publicity commensurate with the drama and world influence it represents.

## What Others Say

"I think I could give Mr. Noble a possibly useful clue to the high accident rate among student pilots and amateur aviators in general in the United States, in a short phrase of three words. 'Lack of discipline,' the general disregard of, and contempt for, regulations for which the United States has ever been noted, the same mental attitude which makes it necessary for all American policemen to pack a gun while a London bobby gets along very nicely with a truncheon. In aviation specifically it is the same frame of mind which idolizes a Douglas Corrigan not in spite of the fact that he disregarded a Bureau of Air Commerce regulation but very largely because he flaunted it. There can be little doubt that a well organized flying club movement would have a most salutary effect on private flying in the United States. Under the right leadership and without undue coercion, they might change for the better the whole psychology of America's private and student pilots. And if this wouldn't work, the clubs themselves are more amenable to discipline than are individuals, and being closer to the individuals, should be better able to enforce discipline upon their members."—Flight Commander A. H. Sandwell, in the Montreal Star.

This taken at Johns I president chairman

Left to U. S. N. Dr. L. J. Orville sonian of the Bush; D. NACA. Absent Air Corp

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## NACA Membership



This photograph of the National Advisory Committee for Aeronautics was taken at a meeting held Oct. 20. Dr. Joseph S. Ames, president emeritus of Johns Hopkins University, was re-elected chairman and Dr. Vannevar Bush, president-elect of the Carnegie Institution of Washington, was elected vice-chairman.

Left to right are: Clinton M. Hester, CAA administrator; Capt. S. M. Kraus, U. S. Navy; Brig. Gen. A. W. Robins, chief, materiel division, Army Air Corps; Dr. L. J. Briggs, director, National Bureau of Standards; Dr. E. P. Warner; Dr. Orville Wright; Dr. Joseph S. Ames, chairman; Dr. C. G. Abbot, secretary, Smithsonian Institution; J. F. Victory, NACA secretary; Rear Admiral A. B. Cook, chief of the Navy's Bureau of Aeronautics; E. J. Noble, chairman, CAA; Dr. Vannevar Bush; Dr. J. C. Hunsaker; Dr. George W. Lewis, director of aeronautical research, NACA.

Absent were Col. Charles A. Lindbergh and Maj. Gen. H. H. Arnold, chief, Army Air Corps. No representative from the U. S. Weather Bureau has been appointed.

Canada Transporters  
Form Central Bureau

Regina, Sask., Oct. 31—Representatives of 11 Canadian air transport companies today completed organization of Passenger & Express Air Services, Ltd., to eliminate duplication of air bases, radio and fueling facilities; credit, traffic and collection offices. The agency, which will have a dominion charter, will comprise equal shareholders who are members of the Canadian aviation industry.

Grant Macdonald, of Macdonald Bros., Winnipeg aircraft manufacturing company, will serve as temporary managing director for the first year. Others asked to serve as directors are: James Young, Canadian Pratt & Whitney Co.; Quebec; C. Becker, Edmonton, representing Alberta; F. M. Ross, Montreal, representing the maritime provinces; Macdonald representing Manitoba; J. L. Deering representing Saskatchewan. Complete slate of officials will include a general manager, controller, secretary-treasurer, and a board of seven directors. All must be interested in aviation's welfare but must not be directly engaged in transportation or employed or financially interested in any transport company.

Companies represented in the two day meeting were Canadian Airways, Ltd., Winnipeg; Dominion Skyways, Ltd., Montreal; Prairie Airways, Moose Jaw; M. & G. Aviation Co., Prince Albert; Arrow Airways, The Pas, Manitoba; Mackenzie Air Services, Edmonton; United Air Transport, Edmonton; Ginger Coote Airways, Vancouver, B. C.; Barrett Airways & Transportation Co., Hudson, Ont.; Quebec Airways, Montreal; Speers Airways, Regina, Sask.

The main office of the association will be in Winnipeg, with branches in Vancouver, Edmonton, Toronto and Montreal.

## Radio Program

West Palm Beach, Fla., Nov. 4—Dorothy C. Lemon, of the W. R. Lemon, Inc. Flying Service at Belvedere Airport here, has begun a series of aviation educational programs each Thursday evening over WJNO. For her first program last night she had two guest speakers, Chief of Police Bob Milburn and Elmer Life Hoskins Burgess, newspaper publisher. Purpose of the programs is to interest local people in flying by broadcasting well known citizens and their opinions.

## HINDENBURG REPORT

CAA Publishes Comparative Digest of American, German Accounts of Crash

The Civil Aeronautics Authority has released report 11, entitled "The Hindenburg Accident," a comparative digest of the German and American reports of the crash, prepared by R. W. Knight, acting chief, air transport section, of the old Bureau of Air Commerce.

The reports are similar up to the final sentences of their conclusions, which reflect a difference of opinion as to the most probable cause of the spark that ignited the mixture of gas and air resulting in the catastrophe. The American investigators believed that this was caused by a brush discharge due to atmospheric electrical disturbances. Although mentioning this, the Germans state that it was most likely started by a spark caused by equalization of tension between wet spots on exterior, and the ship's framework, the latter being better grounded than the covering after dropping the manila landing ropes. It is noted that the actual cause of the fire still remains unknown.

## Improving Reeves Field

Los Angeles, Nov. 8—Work is progressing at Reeves Field on Terminal Island, Los Angeles Harbor, on new barracks and hangar space and a jetty. A WPA-PWA allotment of \$2,000,000 has been made available.

## Obituary

WILLIS HENRY SMITH, pioneer Elmira, N. Y., flyer died Oct. 29 in Elmira. He was formerly manager of an aero engineering service here, was for a time on the engineering staff of Spartan Aircraft Co., Tulsa, and after returning here did experimental work on gliders and sailplanes. He is survived by his mother, a sister and one brother, all of Elmira.

HERBERT FREES, 27, instructor at Roosevelt Field, died Oct. 26 when the Cub he and a companion were flying fell near Easton, Pa.

DON MARTIN, pioneer flyer and recently a mechanic at the San Francisco Bay airdrome, was killed Oct. 20 in a motor car accident near San Francisco.

## Aeronautical Bookshelf

LISTEN! THE WIND, by Anne Morrow Lindbergh, 262 pages. \$2.50. Harcourt, Brace and Co., New York.

This is the story of the flight made by the Lindberghs across the Atlantic Ocean from Africa to Brazil in December, 1933, at the end of their survey of the North Atlantic air routes. The book is so beautifully written that the reader scarcely realizes that the authoress has included every detail of importance concerning the flight plans, final preparation of the plane, manipulation of the radio, and the actual piloting.

The foreword, full-page map drawings and an appendix, giving an itemized list of the equipment carried on the flight, were prepared by Colonel Lindbergh.

"It is a record of technical achievement, a record historically valuable; in Anne Lindbergh's hands it becomes literature," the *New York Times* commented.

AERONAUTICAL METEOROL-  
OGY, By George F. Taylor, chief meteorologist, Western Air Express Corp. 116 illustrations, 25 tables. 425 pp. Pitman Publishing Co. 2 W. 45th St., New York City. \$4.50

The author, now with Western Air Express, was formerly chief meteorologist for American Airlines. In a foreword written by C. R. Smith, president of American, Mr. Smith states that the author "has been a pioneer in the application of the principles of meteorology to the practical problems of air transportation."

Mr. Taylor has done a painstaking job in compiling this useful volume. It is a practical book that can be used by pilots, dispatchers and students and not the least practical feature is its sparing use of higher mathematics. In respect to bibliography, illustrations and tables it is unusually complete and comprehensive.

Realizing the insecurity of many of the present theories of meteorology, Mr. Taylor has presented all sides fairly; he himself has taken ample cognizance of the constant changes that are taking place in this important science. He points out that at the present time attention is being shifted to the air mass as the basis of weather analysis and forecasting and tells of the weakness of weather discussions based on the pressure field alone.

Among the twenty-two chapter headings are: The Atmosphere, Observational Material, Thermodynamics, Circulation, Air Masses, Fronts, Clouds, Special Problems of Aviation, The Weather Chart, Forecasting, Airline Meteorological Departments, Flight Dispatching and Climatology.

BIBLIOGRAPHY OF AERONAUTICS, PART 23, AIRSHIPS, prepared by the U. S. Works Progress Administration. 399 pages. Not for sale.

This complete and useful bibliography has been compiled by WPA workers from the Index of Aeronautics of the Institute of the Aeronautical Sciences. It is divided into three sections: books and pamphlets on airships; periodical articles, books, pamphlets, etc., on airships, classified by subject; and periodical articles, books, pamphlets, etc., on airships, classified by country. An author index is also included.

The bibliography is not for sale. Persons and organizations desiring copies may apply by letter, stating the use for which the books are required. All correspondence should be addressed to John R. Palmer, managing project

supervisor, WPA, 5111 R.C.A. Bldg., New York City.

INSTRUMENT AND RADIO FLYING, by Karl S. Day. 284 pages. \$3.50. Air Associates, Inc., Garden City, N. Y.

The author, who is assistant flight superintendent of American Airlines, has attempted to keep his book simple and understandable. Stating that "when you control the instruments you control the airplane," Mr. Day has written chapters on elementary instrument flying, characteristics of radio ranges, elementary radio range flying, instrument approach procedure, instrument flight test, the radio test, the written test, radio compasses, instrument landings and other development projects, and procedures on the airways.

There are numerous illustrations throughout the book, and two appendices, one on a two station interphone system, and the other containing the examination for radiotelephone third class license.

PLANE FUNDAMENTALS FOR FLYER'S LICENSE, by Bert A. Kutakoff. 112 pages. \$1.50.

Kutakoff, a former U. S. Navy pilot, compiled this 6"x8" book to cover all government requirements. It contains a diagram of the air commerce regulations, and has chapters on airplanes, engines, navigation, meteorology, air traffic rules and commerce regulations, and the amendment to the Civil Air Regulations of Mar. 9, 1938. Containing many illustrations, the book simplifies navigation and plotting course problems, and appears to be worthy of consideration by ground school instructors of adult education groups.

THE AIRPORT DILEMMA, by American Municipal Association and American Society of Planning Officials. Issued as No. 62 of the Public Administration Service Series. 46 pages, 10 tables, 11 figures. Price \$1. Public Administration Service, 1313 E. 60th St., Chicago.

This volume, "a review of local and national factors in airport planning and financing," is the first report of its kind in this country, representing the joint effort of two national associations operating in the field of government.

Part 1, "Background and Present Status," comprises three chapters. Under "The Growth of American Aviation" are subtopics, Uses of the Air, and The Airways System. Under "Facts and Figures About Municipal Airports" are excellent though brief mention of types of airport financing—federal, state, and what airports cost the cities. Under "What Is the Municipal Interest in Aviation?" are references to potential business, plane size and construction, absence of a national airport plan, uses of airports, and how airports can be paid for.

Part 2, titled "Planning Airport Development," considers in three chapters, "National Aspects" (the CAA airport surveys), "State and Regional Aspects," and "Local Aspects."

Written in non-technical style, excellently printed, this work presents a surprising amount of concentrated knowledge on the subject. It is highly recommended. No municipality, library or airport manager should be without it.

Dick Freeland has joined Eastern Aeronautical Corp., Newark, as chief pilot, succeeding Elliot Underhill, who now is piloting a private plane.

## Lear Announces Radio Compass, Automatic Direction Finder

A new light-weight aviation radio compass and automatic direction-finder, which incorporates a "robot" loop and which enables bearings to be taken automatically, on any station tuned, without effort on the part of the pilot, has been released for sale and distribution by Lear Developments, Inc.

In the rotatable loop type radio compass and direction-finder, a remote mechanical control is provided, enabling the pilot to take bearings on stations to the right or left of his course without changing the heading of the ship. The remote control also indicates the azimuth position of the loop, and by taking bearings on two or more stations, he may locate his position on the map. The new Learadio ARC-6 direction-finder takes these bearings automatically by means of a motor-driven loop. After the station is tuned, the automatic radio frequency relays start the motor, causing the loop to rotate until its front face points directly at the station. The airplane outline in the center of the robot loop indicator bears the same relation to the azimuth pointer as the actual plane does to the station tuned to.

The robot loop, turned by a small electric motor which is controlled by the received radio signal, is enclosed in a streamlined weather-proofed housing which may be mounted on the outside of the ship, either above or below the fuselage. The loop is continuously kept at right angles to the source of the signal. Motor and controlling devices are mounted on the loop base inside the airplane, and electrical cables connect the robot loop mechanism with the instrument panel type of indicator.

Although crystals can be provided for operating the receiver as a crystal-controlled unit on any of the four bands, the company does not believe it probable that they would be required for anything other than the high frequency end of the broadcast and entire communication bands.

Increased frequency range provides simultaneous aural reception of signals and direction-finding on the following bands: 180-405-kc., 500-1200-kc., 1200-2800-kc., and in addition, communication reception is provided between 2800 and 6700-kc.

The main tuning unit, which is small enough to mount on the instrument panel, is large enough to contain the controls for tuning the radio frequency and loop circuits. The antenna switch on the main panel permits selection of three types of reception: (1) the loop antenna for reduction of rain static, and for aural null direction-finding; (2) reception antenna for communication and radio range navigation, and (3) radio compass indications which require both loop and sense antenna reception.

The ARC-6 radio compass provides four different means of determining bearings of the station tuned in, in the first two of which it is a line-of-bearing instrument with bi-directional characteristics: aural null or minimum audio audible signal type of direction-finder; using the signal strength meter as an indicator to obtain the minimum signal visually; using it as a left-right visual type radio compass direction-finder, which is automatically unidirectional, and fourth, the unit may be had with the automatic robot loop and remote indicator.

In using the Learadio automatic direction-finder, the pilot heads the ship in the direction which causes the indicator needle to move to the homing position. When the plane passes over the station the needle or indicator revolves and points to the tail.

The ARC-6 radio compass may be supplied either as an automatic direction-finder, or as a left-right indicator type, using either a fixed or rotatable loop. The weight of the automatic

robot type is less than 50 lbs., installed, while the rotatable loop type weighs 42 lbs.

### Lear Sets to CAA

Lear Developments, Inc., is delivering to the Civil Aeronautics Authority a new ultra high frequency, crystal controlled superheterodyne aircraft receiver to be used on 125 megacycles, radio range frequency, and on 141.78-mc. for local control tower research. Learadio also has delivered a 10-watt ultra high frequency crystal controlled radiophone transmitter. "Experimental work carried on by TWA and the Bureau of Air Commerce—CAA indicates a growing trend toward use of ultra high frequencies for aircraft radio communication because of the great improvement in signal to noise ratio, reliability, and freedom from interference by the elements," the manufacturer reports.

### Aviation Corp. Lays Plans for New Plant

Long Beach, Cal., Oct. 27—A contract with Aviation Corp. of America for establishment of a \$100,000 aircraft factory at municipal airport is being drawn up on orders of the Long Beach city council.

A resolution as approved by the body provides that the corporation must start within two years on construction of the plant, investing not less than \$100,000 in the structure, exclusive of equipment, within five years. There is an option on 70 acres of the Montana Land Co.'s property north of the airport. No information has been forthcoming as to which division of the corporation will be located here or the type of planes which will be built.

As an evidence of good faith the city is guaranteeing that the airport will continue to be operated in first class condition, and that runways and taxiways for testing all sizes of aircraft will be maintained.

### Quits Airport Board

New Haven, Conn., Oct. 30—Franklin Farrel, Jr., has resigned from the board of airport commissioners after serving for eight years. Dissatisfaction with the city's unwillingness to spend additional money at the airport was given as the probable reason. Floyd I. Newton, president, said "I feel myself that it's largely a waste of time at present because we are powerless to do anything."

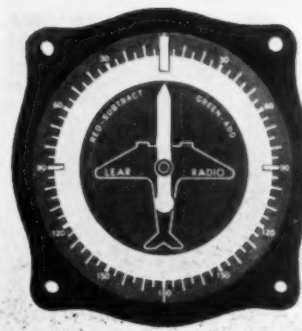
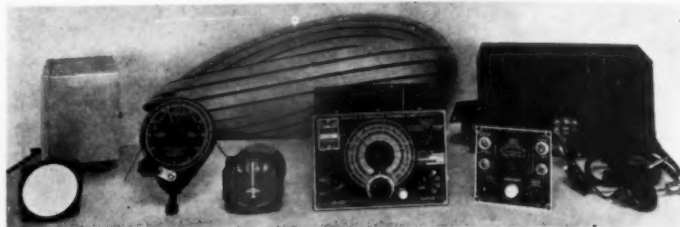
### Charged With Hedge Hopping

Boulder, Col., Nov. 1—R. L. Berry, operator of a flying school here, has been ordered to appear before a formal joint hearing of the state aeronautics commission and representatives of the CAA (date not set) on a charge of flying low over a football game in Boulder Oct. 29. Police Chief R. C. Prater said witnesses told him Berry's plane was about 200-ft. above the ground when it flew over the stadium.

Charleston, W. Va.—Kanawha Flying Club received delivery of a new Aeronca seaplane Oct. 28, and the same day soloed its 135th student. Glenn T. Clark, director, says his students average 150 flying hours a month.

Lubbock, Tex.—An organization meeting was held here Oct. 30 launching a local NAA chapter. Charles A. Rowe, state NAA executive, is directing activities. C. Breedlove, manager of municipal airport, is aiding.

## Lear's Automatic Direction Finder



At top: Learradio Model ARC-6, consisting of left-right indicator, loop rotator, tuning unit, compass control panel, amplifier unit, rotatable loop in streamlined housing. The robot loop and remote indicator are optional.

Below (left) Compass control panel, used not only as an aid to the exact center of the station but also to judge approximate distance to a station. Cone of silence may be noted visually on this meter as well as in headphones.

Below (right) Remote robot loop indicator which points direction to the station being heard.

Akron, O.—Mrs. Henry F. Schippel, 203 Casterton Ave., has been nominated president of local women's chapter of the NAA. Mrs. W. B. Kester is present president.

Pittsburgh, Pa.—Members of the Pilots' Club at Pittsburgh-Butler airport have remodeled a clubhouse for the winter's regular sessions.

## It's Reader Interest that Counts!

AMERICAN AVIATION  
Earle Building  
Washington, D. C.

Oct. 24, 1938

Gentlemen:

AMERICAN AVIATION is all too popular with our organization. So popular, in fact, that I literally have to guard the single copy that comes to this school. Even then, occasionally my copy comes up missing.

In view of this popularity of your splendid magazine, I should like to order two additional subscriptions for our school superintendent and our advertising manager.

\*....., President

\*.....Flying School

(Actual copy)

\*Name on request

AMERICAN AVIATION continues to be the most avidly read aviation magazine in America. Net paid circulation shows a constant growth upwards. Reader interest makes for advertising effectiveness. No premiums, no special inducements. The advertiser who wants his message read knows that he cannot leave AMERICAN AVIATION off his advertising budget.





## Conquistadores Del Cielo

(Conquerers of the Sky)

Not many weeks ago 100 business men and aviation executives spent three days at several dude ranches in northern New Mexico on a ranch party sponsored by TWA and Gov. Clyde Tingley of New Mexico. Trout fishing, dove shooting, riding and other outdoor activities were chief attractions. In the above photo are seen, 1. to r., Lyle Brush of the Brush Ranch; A. D. Smith, Superintendent of the TWA Albuquerque division; J. W. Walker, TWA vice-president; Bob Six, president of Continental Air Lines, and Paul Richter, executive vice-president of TWA, leading the "grand parade" which preceded the rodeo.



Above are, 1. to r., Moss Patterson, rancher, flyer and bus operator of Oklahoma City; Larry Keif, of the aviation division of The Texas Company (Texaco); and Bob Six, president of Continental Air Lines.



Paul Richter, executive vice-president of TWA, doing what might be called a careless job of flying. Yes, he bit the dust.



Jack Frye, TWA president, might have gone after something his own size instead of that poor little thing.



The four gentlemen above are E. L. Moulton, of Albuquerque; J. B. Walker, TWA vice-president, boasting of the fish he probably didn't catch himself; Dick Berlin of Hearst magazines, New York City; and Charlie Babb, the well known aircraft broker of Glendale, Cal.



Above: LaMotte Cohu, the dignified Wall Street director of TWA in the undignified position of being branded with the symbol of the Conquistador by Louise Dickens of Albuquerque.



Above: Al Adams, president of Western Air Express, at left, and John Hertz, Jr., a TWA director, seated, evidently amused at something going on out of the camera's range.



Above: Another Conquistador going through the branding ceremony. He's C. W. France, vice-president and general manager of the Curtiss-Wright Corp. of St. Louis, Louise Dickens again officiates.

### Torch Sets Off Blast

St. Louis, Oct. 23—Damage estimated at \$1,000 resulted yesterday when the gasoline tank exploded in a plane owned by Joseph Imeson, president of St. Louis Airlines. A welding torch nearby set off the blast, which occurred in a hangar of the St. Louis Flying Service. No one was injured.

### Portland Alternate Stop

Portland, Ore., Oct. 25—Pan American Airways has named Portland as an alternate port to Seattle in its Seattle-Juneau service, according to announcement by William Van Dusen, director of public relations for the company.

### N. E. Tour a Success

Boston, Mass., Oct. 23—The New England Air Tour, arranged by Glynne M. Jones, CAA inspector, came to a successful close today. Starting from Hartford, Conn., with 26 planes, the tour at one time had as many as 50 aircraft in the group. Stops were made at Westfield, Mass.; White River Junction and Montpelier, Vt.; Concord, N. H., and Waterville, Augusta and Portland, Me. Inspectors O. P. Harwood and Thomas L. Gates were also present. State and city officials greeted the flyers at the stops. No mishap marred the tour.

### Airmark 213 N. C. Towns

Raleigh, N. C., Oct. 29—The state department of conservation and development has announced that \$22,363 of WPA money will be spent to airmark 213 cities and towns. Markers have been completed in 126 communities and completion of the current work will bring the state's total to 339. The North Carolina Aeronautics Committee, of which Elmer G. Meyers, manager of the Raleigh Airport, is chairman, recommended the project and worked out its details.

### Arizona Airmarking

A \$6,396 WPA air marking project will begin in Arizona shortly, according to Wilson Wright, chairman of the state Corporation Commission.

### 1939 Ryan S-C Announced

San Diego, Cal., Nov. 3—Principal refinements on the 1939 Ryan S-C metal cabin planes, now coming off the production line, include new design of the windshield, increased flap area for more effective glide control, relocation of the carburetor air intake, better cabin ventilation and additional head room in the rear seat. Other changes have been made in the braking system, battery mounting, pilot's seat adjustment, tail wheel, instrument panel and sliding hatch. Powered with a Warner 145-hp. Super Scarab engine, the S-C has a 135-mph. cruising speed.

## Ryan Chief Speaker for Dedication of Harrisburg Airport

Harrisburg, Pa., Nov. 3.—The first public statement of the part the Civil Aeronautics Authority will play in the national defense program was made here today by Oswald Ryan, member of the Authority, who spoke at the dedication of the Harrisburg State airport.

"Civil aviation is the backlog of aerial preparedness for the national defense," he said, "and the new CAA is addressing itself to the task of supplementing and strengthening the air programs of both the Army and the Navy. The Authority's efforts in this direction will be coordinated at all times with the defense programs of the Army and Navy so there will be no conflict or lost motion in a united air defense policy. Both the Army and the Navy realize that private flying and scheduled air transportation have created an invaluable aeronautical reservoir from which the armed forces of the country can quickly recruit both men and machines in the event of a national emergency."

The airport is considered the finest for a city of this size in the nation. It has three surfaced runways, two of 4,000 feet, one of 3,750 feet. The new administration building has just been opened and is fully equipped. The airport has a complete alternate power and lighting system. Among those participating in the dedication were Major Al Williams of the Gulf Oil Co.; Major Alexander P. de Seversky; Jimmy Taylor, test pilot, and city and state officials.

## New Portable Hangar Units are Announced

A new type portable all steel hangar which may be built singly or in blocks of two or more has been perfected by Edwards Iron Works, Inc., South Bend, Ind. Claiming that the hangar "revolutionizes all previous concepts for housing planes," the company lists as advantages lower initial and maintenance cost, flexibility in meeting storage requirements in that separate units (each housing one plane) may be added only as demanded, new conveniences for private owners, durability; protection from theft, sabotage and damage due to congestion; less danger from fire, portability.

Two men may place the new type cantilever trusses, and the only tools needed for assembly are a wrench and screwdriver. The manufacturer stresses the low cost, adding that with one side wall saved for each additional unit, investment is reduced in proportion. Average cost of one of the new hangars, with concrete floor, is from 50% to 300% less per plane housed. Figured at average rentals of \$10 to \$15 a month, the return on the investment is about 1 1/2% a month, the manufacturer states. Height of the hangar is 16-ft., which, in comparison with the average 36-ft. height, saves about 400-ft. of landing space on a field.

Inventors are Capt. Charles R. Bowers, pilot and airport manager at South Bend, and W. Howard Edwards, engineer and manufacturer, who have planned the project for more than two years.

### New Madison Port Manager

Madison, Wis., Oct. 29.—The common council has approved appointment of Capt. Howard A. Morey, local flyer, as manager of the new municipal airport for five years on a concession basis.

## Dedication Attractions



At top, Major Al Williams, director of the aviation department of Gulf Oil and one of the nation's top flyers (left), at the Harrisburg State Airport dedication Nov. 3. At his right is Ray Magnelli.

Below, Major Alexander P. de Seversky, president of Seversky Aircraft Corp. (left), and Col. A. H. Stackpole, associate editor of AMERICAN AVIATION, just after Seversky had flown from New York to Harrisburg in 42 minutes.

### Florida-N. Y. Tour

Miami, Fla., Nov. 1.—John L. Morris, general manager of the chamber of commerce, has announced a Florida-New York air tour is being planned for next summer, with an attempt to have each of the 67 counties represented. The tour committee includes Morris, M. M. Frost, Tampa; O. K. Homes, Lake City; H. C. Whitney, state director of aviation; Wright Vermilya, Jr., NAA governor for Florida, and E. C. Nilson, Orlando.

### Storch Craft Returns

New York, Oct. 27.—The German Fiesler-Storch plane which performed in slow motion at the Cleveland races left here by freighter for Europe today.

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### Lee Heads Pilots

Indianapolis, Oct. 23.—Phillip Lee, Jr., of Cincinnati, was elected president of the National Aero Clubs and Sportsmen Pilots Association which ended its annual week-end meeting here today. Herbert O. Fisher, of Indianapolis, retiring president, was elected vice-president; Harold A. McGrath, Chicago, secretary, and Ellie A. Carson, Evansville, treasurer. Grove Webster, CAA chief of private flying, was one of the chief speakers. Cincinnati was chosen as the 1939 meeting place.

Springfield, Mass.—Springfield Aviation Club has launched a program to develop municipal airport. Harry Dunn is president, Irving Marshall is vice-president, Dr. Gustave Frank is secretary and James F. Lyons is treasurer. Arthur Martin is publicity representative.

Macon, Ga.—Macon Aero Club, for pilots and air enthusiasts, has been organized with the following officers: A. T. (Monk) McAlister, president; Kyle Sloan, vice president and Miss Hazel Raines, secretary-treasurer. Membership is about 30. A clubhouse near Herbert Smart airport has been purchased.

Charlotte, N. C.—About 8,000 watched an air show here Oct. 30 sponsored by the Business & Professional Women's Club for the benefit of a charity fresh air camp. Jimmy Wood, of Charlotte, won a 10-lap race for lightplanes, piloting an Aeronca. Revis Nelson in a Taylorcraft was 2d, and Bob McKee, of Salisbury, was 3d, flying a Luscombe. Capt. Art Davis and his All American Air Aces performed.

Allentown, Pa.—Lehigh (University) Aeronautical Society has purchased a 9-cylinder radial motor to aid members in studying motor overhaul and construction, a course directed by Henry Weaver. Weekly discussion meetings are held at the YMCA, but club quarters are at 809 Linden St. Joel H. Ritter, president, is soliciting donations of shop equipment and local newspapers are cooperating in making the announcements.

Dallas, Tex.—Local chapter of the Women's NAA is now headed by Mrs. Andy Anderson, governor; Mrs. F. C. Pettitt, president; Mrs. Art Mills and Mrs. Stella Tryon, vice-presidents; Mrs. Johnnie Williams, secretary, and Mrs. Joe Towle, treasurer.

Columbia, Mo.—The \$200,000 municipal airport here was dedicated Oct. 30 with planes from Kansas City, St. Louis and Jefferson City taking part in an air show.

## SEVERSKY BUILDS COMMERCIAL MODEL

Executive is Adaptation of P-35 Military Pursuit Plane; Suitable for Feeder Lines, Company States

The new Executive, a four-passenger, all-metal, low-wing commercial monoplane, capable of speeds up to 330-mph, has been announced by the Seversky Aircraft Corp., and the company states that the plane is suitable for fast airline feeder service or as a private aircraft for executives.

The ship, which is the company's first commercial model, is an adaptation of the Seversky P-35 military pursuit plane. The prototype has been flown for the past three years by Frank Fuller, racing pilot.

Equipped with retractable tricycle landing gear and Fowler flaps, the plane is powered with a Pratt & Whitney twin-row 1200-hp. motor, although any air-cooled radial engine, from the 450-mph. class up, can be installed without any change in the ship.

To minimize the hazard in case of a forced landing, the company states, the landing can be effected with the tricycle gear retracted. A stainless steel ski, adapted for this purpose, is provided to protect the structure of the airplane in case an emergency landing is made. The cabin is constructed of stainless steel shot-welded box spars, capable of withstanding six times the weight of the plane in an inverted position.

Performance and weight figures for the standard model are as follows:

Wing Span	.....220 sq. ft.
Height	.....10 ft. 1 in.
Length	.....27 ft. 4 1/2 in.
Weight empty	.....4,890.5 lbs.
Useful load	.....1,845.2 lbs.
Gross weight	.....6,735.7 lbs.
Fuel capacity (normal)	.....170 gals.
Fuel capacity (with large wing panels)	.....450 gals.
Gross weight (with large wing panels)	.....8,593.2 lbs.
Motor—Pratt & Whitney R-1830-33C-G	.....950 h.p. at 14,000 ft.
High Speed	.....330-mph.
Cruising speed above 13,600 ft.	.....300-mph.
Range at cruising speed (standard)	.....850 miles
Range at cruising speed (extra tanks)	.....2,000 miles
Service ceiling	.....26,500 ft.
Rate of climb at sea level, 2,900 ft./min.	.....

The plane will be equipped with two-way radio, radio compass, blind flying and landing equipment, automatic pilot and de-icers.

Cincinnati, O.—Harry Wimer, formerly test pilot for Aeronautical Corp. of America, is organizing the Cincinnati Aviation Society at Major Hugh Watson Field, Sharonville, O., Wimer, who will be the club's flying instructor, said an Aeronca Chief will be used for instruction.

Seattle, Wash.—Capt. Joseph P. Adams, local lawyer and commanding officer of Scouting Squadron No. 9, Marine Corps Reserve, Aviation, has been elected president of the local NAA chapter. Other officers: James G. Thwing, vice-president; Bert Kinsman, treasurer; Richard Rummel, secretary. New directors include Robert O. Bullwinkle, Harold Mansfield (Boeing Aircraft Corp. publicity chief); Dr. Frank Parsley, Ed Williamson, Charles L. Smith.

## Introduce Multiple Hangar



Drawing of the new Edwards Multiple Hangar



## Douglas' 2 New V. P.'s Well-known in Industry

Both Major Victor E. Bertrandias and Edmond R. Doak, whose appointments as vice-presidents of Douglas Aircraft Co., Inc., were announced Oct. 24, (AMERICAN AVIATION, Nov. 1) are well known figures in aviation.

Major Bertrandias, who will continue to have charge of export sales, is a native of San Francisco. He entered aviation there with Art Smith in 1915 and toured the Orient with him the following year. In the war he served with Rickenbacker's 94th pursuit squadron, remaining in the Air Corps until 1929.



Doak

Bertrandias

In the Army he served as chief inspector at Wright Field and western district manager. He established the world's seaplane record at Langley Field in 1924. Since 1932 he has been Douglas' export sales manager.

Mr. Doak, native of San Antonio, entered aeronautics in 1914 with Glenn L. Martin in Los Angeles. He helped start airplane production during the war and was signal corps inspector at the Liberty Iron Works in Sacramento where the late Harry H. Wetzel, later his boss at Douglas, was organizing war time production of planes. He came to Douglas in 1922 as purchasing agent; returned to the company after a two year absence as executive at the Northrop Division where he was instrumental in turning out the present ships for the Army. He is a reserve captain in the Air Corps.

Both men will coordinate their efforts under the direction of Major Carl A. Cover, senior vice-president. Mr. Doak will be manager of the El Segundo plant (formerly Northrop Division).

## CLASSIFIED ADS

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## Financial Reports

### Curtiss-Wright Corp.

Curtiss-Wright Corp. and subsidiaries for the quarter ending Sept. 30, 1938: Net profit, \$444,036 after charges, equal to 38c each on 1,158,464 shares of \$2 non-cumulative Class A stock; comparing with \$690,987 (1c a share) in corresponding quarter of 1937, after Class A dividend requirements, and \$1,447,951 (12c a share) in quarter ending June 30, 1938.

For 9 months ending Sept. 30, 1938, net profit of \$2,625,898, or equivalent to 12c a share on 7,429,098 shares common, after 9 months Class A dividend requirements. Compares with net profit of \$1,591,584, equal to \$1.37 a share on 1,158,388 Class A shares, for 9 months ending Sept. 30, 1937.

### Wright Aeronautical Corp.

Wright Aeronautical Corp. net profit for quarter ending Sept. 30, 1938, is \$822,740, after depreciation and federal income taxes; equal to \$1.37 a share on 599,857 no par shares capital stock. September quarter profit for 1937 was \$610,596 (\$1.02 a share), and profit for quarter ending June 30, 1938, was \$1,081,958 (\$1.80 a share). For 9 months ending Sept. 30, 1938, net profit was \$2,490,985 (\$4.15 a share), as compared with \$1,647,190 (\$2.74 a share) for 9 months ending Sept. 30, 1937.

### Eastern Air Lines, Inc.

For the 9 months ending Sept. 30, net profit of \$137,588 after depreciation, amortization, interest, federal income taxes, etc., or equivalent to 33c for each of the 416,666 shares capital stock. For a part of this year period (Jan. 1, 1938, to Apr. 22) statement is of Eastern Air Lines Division of North American Aviation, Inc.

Total assets as of Sept. 30: \$5,188,687. Capital surplus, \$796,126. Earned surplus (from Apr. 22, 1938), \$7,985. No funded debt. Current assets, \$1,650,732, including \$892,962 cash. Current liabilities, \$607,203. Inventories, \$183,222.

### Continental Revenue Jumps

Continental Airlines' revenue during the first 12 days of October was equal to its income during all of October, 1937. Income during National Air Travel Week, Oct. 1-9, was 300% greater than during a similar 1937 period.

### Colombians to Buy Here

Officials of Saco Aviation Co., of Colombia, sailed for New York Oct. 29 to purchase equipment and accessories for improving service, according to the *New York Times*. Firm recently received half of a subscription of \$115,000 for placing operations on a sound financial basis. State governments are expected to subscribe additional funds. The company is the only competitor of Scatda, now owned in part by Pan American Airways.

### G. L. Martin Election

In an election held at the Glenn L. Martin Co. plant on Sept. 7, none of three labor unions gained a majority, and none "is entitled to recognition," the National Labor Relations Board announced on Nov. 1. The three unions represented were the United Automobile Workers of America (CIO), International Association of Machinists (AFL), and the Middle River Employees Association (independent). A total of 915 votes was cast for the IAM, and 1,028 against it.

### Brewster Aeronautical Corp.

Brewster Aeronautical Corp. reports a net income of \$234,383 (67¢ a share on 350,000 shares, common) for 9-months ending Sept. 30 after engineering expenses, depreciation, federal income taxes, etc. September net income was \$5,657. Backlog as of Sept. 30 was \$2,187,643. Current assets \$849,592, including \$450,285 cash. Current liabilities, \$165,884.

### United Aircraft Corp.

United Aircraft Corp. and subsidiaries: Net profit for Sept. 30 quarter \$1,142,694.14 (45¢ each on 2,543,140 shares). Net income for 9 months is \$3,564,405.51 (\$1.40) after provision for federal income taxes at 19% of taxable net income, less credit for 2½% of dividends paid.

Other figures for quarter: Sales of aeronautical products, parts and service: \$7,887,695.58; royalties, proceeds from sales of design and manufacturing rights and licenses: \$182,617.79. Operating costs and expenses include cost of sales, \$5,328,711.95; depreciation, \$176,399.17; engineering, development, selling and administrative expenses, \$1,239,345.52. Net profit from operations, \$1,325,886.73. Other income, \$77,284.89. Other deductions, \$2,534.29. Net income before provision for income taxes, \$1,400,637.33. Federal and Canadian income taxes, \$253,190.68. Net income before provision for minority interest, \$1,147,446.65. Minority proportion of profits of subsidiary company, \$4,752.51.

### Fairchild Aviation Corp.

Fairchild Aviation Corp.: Net income for 9 months ending Sept. 30, 1938, \$255,402, after charges and federal income taxes, but before provision for undistributed profits tax. Subject to year-end adjustments. This is equal to 75c each on 337,032 shares and compares with \$124,827 (37c a share) for the 9 months ending Sept. 30, 1937. Backlog on Sept. 30 was \$1,173,142, comparing with \$1,251,256 a year previous.

### North American Aviation, Inc.

An indicated third quarter net profit of \$424,316 (12c a share) is reported for North American Aviation, Inc., comparing with \$378,090 (11c) in the June 30 quarter. It is expected year-end profit will be close to \$1,500,000 or about 45c or 50c each on 3,435,033 \$1 par shares outstanding. Net income for year ending Dec. 31, 1937 was \$496,103 (14c).

## French Order Three Lockheeds for Airline

Burbank, Cal., Nov. 4—Three Lockheed 14's have been purchased by the French Air Ministry to be used on Air Afrique, government subsidized airline operating from Marseilles, France, to Tananarive, Madagascar, 7,673 miles, it was announced yesterday by the Lockheed Aircraft Corp. The planes, including engines and standard equipment, will cost about \$262,000, raising company's backlog to \$24,328,000. Delivery will be made within 90 days.

Exterior surfaces will be specially treated with a heat resisting substance for operation in tropical climate. Each craft will carry 11 passengers and a crew of three, and will have a top speed of 250-mph. The French Air Ministry is the 23d foreign airline or government agency to purchase Lockheed equipment. Air Afrique, part of whose route is operated jointly with Belgian Sabena, is the first French line to buy Lockheeds.

## Fairchild Aircraft Not Linked to Deal with Taylor-Young

Fairchild Aircraft Corp., Hagerstown, Md., has issued a statement "clarifying the news" following announcement that Fairchild Aviation, Inc. had obtained a voting control of the Taylor-Young Airplane Co., Alliance, O., manufacturers of the Taylorcraft airplane. The Hagerstown company was not involved in the transaction.

"In November, 1936, the aircraft and engine manufacturing units were segregated from the Fairchild Aviation Corp.," the announcement said, "and since that time the Fairchild Aircraft Corp. has operated as a subsidiary of the Fairchild Engine and Airplane Corp. There is no connection between the latter corporation and the Fairchild Aviation Corp."

"Primarily interested in the Taylor-Young transaction is Fairchild Aviation, Inc., an export corporation and a subsidiary of Fairchild Aviation Corp. Organized to carry on an export business alone, this company handled export sales for Fairchild Aerial Camera and other aircraft products, including Taylor-Young airplanes. Through this connection with the Taylor-Young Co., they were vitally interested in its affairs."

"Due to the similarity in names, and the fact that an aircraft manufacturing company is involved, we realize how easy it is to assume that this transaction brings the Fairchild Aircraft Corp., into the lightplane field. But, as we have outlined above, this is not the case."

## Taylorcraft Licensed by British Concern

Through an arrangement just completed by C. A. Harrison, vice-president of Fairchild Aviation, Inc., Taylorcraft monoplanes are to be manufactured under license in England by Crowther, Ltd., of Leicester. Fairchild Aviation, Ltd., holds the exclusive world-wide sales franchise for Taylorcraft planes outside of the U. S., Alaska and Canada.

Crowther, Ltd., is a long-established firm manufacturing precision cable and textile machinery. Its sales of planes will be restricted to the British Isles only. A. L. Wykes, chairman of Crowther, plans a visit to the U. S. shortly to study production methods. Until production can get under way, parts will be shipped to Leicester for assembly to meet the immediate demands. Many of the jigs, fixtures and tools now in use at the Taylorcraft plant in Alliance, O., will be duplicated and shipped abroad.

The arrangement makes possible the use of Taylorcraft for training under the British Civil Air Guard program. Foreign-built planes may not be used under the subsidy scheme. Gross weight of the Crowther-made plane will be increased from 1100 to 1200-lbs., raising it to a higher subsidy class. Terms of the agreement call for a minimum guaranteed royalty for a period of three years on all planes manufactured by Crowther and a share in the profits of that company. Don P. Wilson, sales engineer of Fairchild Aviation, Inc., completed details of the agreement in England.

## Trade Literature

Chicago Pneumatic Tool Company, New York City, has printed a catalog covering a complete line of airplane tools. Interested persons are invited to write for a copy of S.P. 1851.

## Northwest Airlines' Year Loss Is \$46,607; Revenues, \$2,023,516

Northwest Airlines for the year ending June 30, 1938, reported to the Securities & Exchange Commission on Oct. 29 a net loss of \$46,607.46. Total revenue for the period was \$2,023,516.29, of which \$1,212,143.14 represented mail income, \$766,661.68 represented passenger income, and \$44,711.47 was from other transportation. Total assets were \$1,752,622.64.

Stock holdings as of Aug. 31, 1938, were announced as follows: Croil Hunter, president and director, 2,955 common no par shares and 5 preferred 5% cumulative \$100 par shares; E. I. Whyatt, secretary-treasurer and director, 1,000 shares common and 3 shares preferred; Camille L. Stein, assistant secretary, assistant treasurer, and director, 1,410 shares common; L. M. Leffingwell, director, 1,000 shares common and 2 shares preferred; T. E. Irvine, director, none; William Stern, director, 100 shares common; the Milwaukee Co., underwriters, none; Shreve M. Archer, 50,000 shares common (21.73% of shares of this class outstanding); H. H. Irvine, 52,850 shares common (22.97%) and 125 shares preferred (25.51%); R. C. Lilly, 20,940 shares common (9.10%); R. C. Lilly, trustee, three trusts, 22,440 shares common (9.75%); Brack & Co., 259 shares preferred (52.86%).

Balance sheet figures as of June 30, 1938, include:

Total current assets, \$388,238.28; cash, \$69,577.75. Accounts receivable: due from U. S. and Canadian governments \$100,261.32 in mail revenue and \$7,043.46 for tickets, etc.; ticket accounts from other airlines and agencies, \$76,819.83; scrip accounts, \$3,357.85; sundry accounts, \$86.65. Gas tax refund claims, \$16,681.20. Other current accounts, \$7,968.81; less reserve for doubtful accounts, etc., \$2,500. Inventories, repair parts, supplies, gas, etc., \$48,961.41.

Other assets listed are: recoverable property loss, \$75,851.57; crash insurance fund, \$30,501.39; other accounts receivable, \$15,652.51. The \$75,851 figure represents cost of one plane which was destroyed, plus expenses of about \$3,500 incurred as result of the accident. "The company has made claim against the manufacturer of the plane for the amount of its loss," Northwest reports. The ship was a Lockheed. "Insurance coverage of \$77,400 was carried on the property but no claim under this policy has been made."

Property, plant and equipment assets follow:

Land, \$5,082.47; planes and engines, \$1,242,388.69; buildings and other equipment, \$651,472.31; less reserves for depreciation and amortization of \$931,429.96; improvements to leased property, less amortization, \$15,506.02.

Intangibles include U. S. government air mail contract, at cost, \$48,736.69.

Deferred charges total \$59,478.69.

An additional assessment of \$5,816.15 has been proposed by the government for federal income taxes up to June 30, 1938, which the company is protesting. Accumulated dividends on preferred stock at June 30, 1938, amounted to \$612.50, not declared or paid.

Total current liabilities were \$338,384.44. Accounts payable included materials, expenses, etc., \$217,103.64;

### Switlik Business Up

The Switlik Parachute & Equipment Co. has been awarded a contract for 300 parachutes by the U. S. Navy. Other government contracts, together with domestic and foreign orders, will keep the factory operating at full capacity well into the first half of 1939, firm representatives indicated.

for transportation sold on other lines, \$40,401.33; scrip deposits, \$26,809.59; salaries and wages, \$18,325.86; federal and state payroll taxes, \$11,712.62; due to employees, \$1,240.19; accrued, \$17,875.74; federal and state income taxes (estimated), provision for possible additional assessments for prior years, \$4,915.47.

Deferred income includes unused tickets, \$12,570.47. Reserve for maximum additional crash insurance premium for the year ending Dec. 31, 1938, \$61,032.47. Of 300,000 shares of no par common authorized, 230,060 shares were outstanding (\$1,310,600). Of total amount unissued, 4,900 shares were reserved for conversion of preferred stock. Of 6,000 authorized shares of 5% cumulative convertible \$100 par value preferred stock, 490 shares were outstanding. Paid in surplus was \$41,810.86. Earned surplus was \$60,775.90 (red).

Company reports it is defendant in "several" lawsuits for damages arising from death of passengers in an accident. Damages asked in three suits exceed maximum coverage of \$75,000 per person by \$38,000, \$5,000, and \$547.50.

Profit and loss statement reveals operating expenses as follows: maintenance and repairs, \$383,336.93; depreciation and amortization, \$284,019.33; taxes other than income and excess profits, \$46,671.59; rents, \$50,730.01; other transportation costs, \$1,029,557.39; traffic and advertising, \$222,860.02; administrative and general, \$100,268.74; bad debts charged off, \$289.16. Operating loss, \$94,416.88.

Other income totaled \$47,182.86. Net loss before adjustment for income taxes, \$47,750.28.

For the year Croil Hunter received aggregate remuneration of \$12,000, the late F. W. Whittemore received \$9,166.63, and E. I. Whyatt received \$6,000.

## Comparative Air Transport Record for August (CAA Figures)

	June 1938	July 1938	August 1938	August 1937
Companies operating ...	19	20	20	17
Companies reporting ....	19	20	20	17
Passengers carried .....	115,255	127,590	139,805	123,550
Express carried (lbs.) ..	558,710	541,346	605,400	618,113
Express pound miles flown	343,375,649	319,728,510	359,762,242	352,586,526
Miles flown .....	6,136,757	6,270,990	6,191,715	6,312,271
Passenger miles flown ...	47,514,979	50,859,047	54,839,240	51,941,845
Passenger load factor ...	55.52%	58.57%	63.67%	62.44%

## Preliminary Air Mail Statistical Report for August 1938

Post Office Department Figures—Nov. 1, 1938

Contractor	Route Length (Miles)	Miles of Service Performed	* Payments to Con- tractors certified by Department			
			Total	Per Cent of Whole	Total	Per Cent of Whole
United Air Lines Trans- port Corp. ....	5,639	844,940	421,780,267	33.14	307,807.71	23.06
Transcontinental & Western Air, Inc. ....	3,540	572,532	223,688,353	17.57	155,536.95	11.65
Northwest Airlines, Inc. ....	2,409	376,195	109,360,893	8.59	116,335.24	8.72
American Airlines, Inc. ....	6,768	1,008,649	266,033,909	20.90	294,431.11	22.06
Eastern Air Lines, Inc. ....	3,896	504,823	120,830,774	9.49	122,977.90	9.21
Branniff Airways, Inc. ....	2,283	217,327	37,356,750	2.94	57,776.00	4.48
Western Air Express Corp. ....	1,349	203,477	39,951,774	3.14	59,579.65	4.46
Pennsylvania-Central Airlines Corp. ....	1,733	164,131	17,198,425	1.35	46,803.44	3.51
Inland Air Lines, Inc. ....	1,151	93,934	3,084,965	.24	21,160.55	1.59
Chicago & Southern Delta Air Corp. ....	910	110,704	11,787,380	.93	35,418.28	2.65
Mid-Continent Boston-Maine Continental Air National Airlines Inter-Island Air Grand Total	1,096 1,132 651 725 362 359 34,003	116,187 97,296 62,641 62,661 28,969 18,846 4,483,312	10,163,638 1,511,110 1,573,539 2,269,696 1,336,253 646,051 1,272,873,777	.80 .46 .12 .18 .10 .05 100.00	32,529.36 32,429.00 20,164.19 17,280.00 7,812.63 4,711.50 1,334,749.51	2.44 2.43 1.51 1.29 .59 .35 100.00

\* Subject to final audit by the General Accounting Office.

## 5 Firms Ask Stock Exchange Registration

The Securities & Exchange Commission on Oct. 31 announced that the following companies have filed applications for registration of securities on national securities exchanges:

**Eastern Air Lines, Inc.**—New York Stock Exchange, 416,666 shares of \$1 par value common stock issued.

**Pan American Airways Corp.**—New York Stock Exchange, 1,405,450 shares of \$5 par value common stock issued.

**United Aircraft Corp.**—New York Stock Exchange, 13,050 shares of \$5 par value capital stock to be registered on notice of issuance.

**Aviation Corp.**—Chicago Stock Exchange, 2,831,041 shares of \$3 par value capital stock issued.

**Menasco Manufacturing Co.**—Los Angeles and San Francisco Stock Exchanges, 124,038 shares of \$1 par value common capital stock to be registered on notice of issuance.

## Lockheed's Foreign Office to Amsterdam

Burbank, Cal., Oct. 25—Lockheed Aircraft Corp. has moved its European sales headquarters from Warsaw to Amsterdam and will launch a "vigorous" sales campaign on the continent shortly, Carl B. Squier, vice-president in charge of sales, announced today. Norman Ebin, who has been Lockheed European representative for several years, is in charge of the office, and assisting him is Ferris M. Smith, research engineer, who gained national recognition as project engineer for the development of the Lockheed XC-35 stratosphere transport. The plane was delivered in August, 1937, to the Army Air Corps, which was later awarded the Collier Trophy for experimental work in the craft.

## Aero Patents

20,900: Design for an Airplane. Issued to Berthoud C. Boulton, Towson, and James S. McDonnell, Jr., Baltimore, Md., assignors to The Glenn L. Martin Company, Baltimore, Md.

2,135,119: Airplane Device. Issued to Peirce M. Wood, Mamaroneck, N. Y.

2,134,921: Propeller. Issued to Theodore Kelleweay, Yonkers, N. Y.

2,135,096: Airplane. Issued to Giuseppe M. Bellanca, Newcastle, Del.

2,135,190: Aeronautical Propeller. Issued to Erie Martin, West Hartford, Conn., assignor to United Aircraft Corp., East Hartford, Conn., a corporation of Delaware.

2,135,381: Aeroplane Propeller Drive Mechanism. Issued to Paul Blaser, Rosevear, Alberta, Canada, assignor of fifty per cent to John Blaser, Rosevear, Alberta, Canada.

2,135,464: Aircraft Wing Structure. Issued to Alexander P. de Seversky, New York, N. Y.

2,135,933: Airplane Launching. Issued to Francis T. Courtney, Great Neck, N. Y.

20,901: Aircraft. Issued to Joseph M. Gwinn, Jr., Buffalo, N. Y.

2,134,987: Method of Aerial Advertising. Issued to Norbert N. Shorb, San Francisco, Calif.

2,134,362: Parachute. Issued to Leonard P. Frieder, New York, N. Y., assignor to General Textile Mills, Inc., New York, N. Y.

2,134,661: Variable Pitch Propeller. Issued to Walter W. Everts, Baltimore, Md., assignor to Everel Propeller Corp., Baltimore, Md.

2,134,653: Airplane Flotation Device. Issued to Valentine J. Hill, Jr., Bloomfield, and Henry Ernest Helgis, West Orange, N. J., assignors to Walter Kidde & Co., Inc., Bloomfield, N. J.

2,134,237: Pump for Aircraft Machinery. Issued to Raymond Saulnier, Paris, France.

2,134,025: Sounding Apparatus. Issued to Homer L. Bredouw, Kansas City, Mo.

2,134,132: Method and System for the Vertical Navigation of Blind Landing Airplanes. Issued to Paul Eduard Koster, Berlin-Siemensstadt, Germany, assignor to Siemens Apparate und Maschinen G. m. b. H., Berlin, Germany.

2,134,157: Propeller. Issued to Milton D. Thompson, Fairhaven, Mass.

111,885: Design for an Airplane. Issued to Robert J. Woods, Buffalo, N. Y.

2,134,447: Aircraft Construction. Issued to Herman G. Klemm, Baltimore, and Berthoud Boulton, Towson, Md., assignors to The Glenn L. Martin Co., Baltimore, Md.

2,134,660: Adjustable Propeller. Issued to Walter W. Everts, Baltimore, Md., assignor to Everel Products Corp., Baltimore, Md.

2,134,260: Aeroplane Construction. Issued to James H. Nickerson, Kansas City, Kans.

2,134,126: Aircraft Landing System. Issued to Frederick J. Hooven, Dayton, Ohio.

2,134,509: Brake. Issued to Frederick C. Frank, South Bend, Ind., assignor to Bendix Products Corp., South Bend, Ind.

2,134,520: Clutch Control Mechanism. Issued to Victor W. Kilesrath, South Bend, Ind., assignor to Bendix Aviation Corp., South Bend, Ind.

2,134,593: Clutch Control Mechanism. Issued to Robert P. Brees, South Bend, Ind., assignor to Bendix Aviation Corp., South Bend, Ind.

2,134,598: Universal Joint. Issued to John M. Floyd, South Bend, Ind., assignor to Bendix Products Corp., South Bend, Ind.

2,134,576: Clutch Control Mechanism. Issued to Harold W. Price and Earl R. Price, South Bend, Ind., assignors to Bendix Aviation Corp., South Bend, Ind.

## Raise Bendix Salaries

South Bend, Ind., Nov. 4—Salaries of all employees of Bendix Aviation Corp. who were receiving \$300 a month or less on Mar. 31, last, were restored to the level prevailing at that time, effective Nov. 1, Vincent Bendix, president, announced here today. Mr. Bendix said the move was warranted by the general upward trend in Bendix business. Rigid economies were necessary shortly after Mar. 31 and wage reductions were ordered at that time.



## CONTRACTS

The Department of Labor announced the following contracts, amounting to \$289,486.12, signed during the week ended Oct. 22 by various government agencies:

Kendall Refining Co., Bradford, Pa., lubricating oil, Army Air Corps, \$14,488.90.  
United Aircraft Corp., Pratt & Whitney Div., E. Hartford, Conn., engines and parts, Navy, \$240,282.46.  
Fairchild Aerial Surveys, Inc., Los Angeles, Calif., topographic map, TVA, \$4,751.76.

The Department of Labor announced the following contracts, amounting to \$108,955.41, signed during the week ended Oct. 29 by various government agencies:

Air Cruisers, Inc., Clifton, N. J., fire extinguishers, Army Air Corps, \$25,960.00.  
Switlik Parachute & Equipment Co., Trenton, N. J., parachutes, Navy, \$16,650.00.  
Consolidated Aircraft Corp., San Diego, Calif., airplane parts, Navy, \$11,445.62.

Eclipse Aviation, Div. of Bendix Aviation Corp., E. Orange, N. J., aircraft starters, Navy, \$12,747.00.  
Curtiss-Wright Corp., Curtiss Propeller Div., Clifton, N. J., propeller power units, Navy, \$31,250.00.  
Parker Appliance Co., Cleveland, Ohio, fittings, Army Air Corps, \$10,902.79.

The Department of Labor announced the following contracts, amounting to \$93,962.06, signed during the week ended Nov. 5 by various government agencies:

Lockheed Aircraft Corp., Burbank, Cal., airplane, National Advisory Committee for Aeronautics, \$49,949.00.  
United Aircraft Corp., Hamilton Standard Propellers Div., E. Hartford, Conn., aircraft propeller blade, Navy, \$16,159.56.  
United Aircraft Products, Inc., Dayton, Ohio, regulator assemblies, Army Air Corps, \$14,640.00.

Horton Mfg. Co., Bristol, Conn., parachute cord, Navy, \$13,213.50.

## Air Corps Contracts

The War Department on Nov. 3d announced the following contracts for Air Corps equipment.

To Walter Kidde & Co., Inc., New York City, a contract covering the purchase of oxygen-type E-1 cylinder assemblies in the amount of \$125,894.

To American Gas Accumulator Co., Elizabeth, N. J., a contract covering the purchase of Type D-2 Beacon lamp assemblies and operating oscillating mechanism assemblies in the amount of \$68,295.

To Shell Union Oil Corp., New York City, a contract covering the purchase of grade 100 aircraft engine fuel in the amount of \$54,600.

To Palace Travel Coach Corp., Flint, Michigan, a contract covering the purchase of portable photographic laboratories, Type A-1A in the amount of \$68,633.

To J. Laskin & Sons Corp., Milwaukee, Wisconsin, a contract covering the purchase of electrified shearings in the amount of \$72,030.

## Incorporations

New York—Allied Aircraft Corp., Buffalo. To build low price training aircraft. Bernard J. Huber, M&T Bldg., Buffalo. Capitalization, \$225,000.

Delaware—Atlantic Aviation Sales, Inc. To deal in airplanes. Capitalization, \$50,000. C. S. Layton, G. A. Taggart, Wilmington. Agent: Stewart E. Poole, Wilmington.

Virginia—Shore Airways, Inc., Gloucester, Va. Maximum capital, \$15,000. Paul V. Shore, president, Lowell, Mass. To manufacture, operate and deal in airplanes and their parts. Samuel H. Gellman, attorney, Mutual Bldg., Richmond.

California—Associated Air Services, Inc., lessee and operators of Palo Alto airport. Has acquired assets of Associated Air Services, Ltd. R. A. Isenberg, of Los Altos, is president; Fred Harvey is vice-president; Joseph Donovan is secretary-treasurer; Edward E. Hardy is a director. Already issued: 300 shares no par stock.

Illinois—Lewis Lockport Airport Corp., 221 N. LaSalle St., Chicago. To operate airports, landing fields, etc., 100 shares, common, par value of \$50 a share. Incorporators: F. J. Lewis, B. J. Shell, W. J. Campbell. Correspondent: Campbell & Burns, 221 N. LaSalle St., Chicago.

## Certificates &amp; Approvals

The Civil Aeronautics Authority has announced the following list of recent type certificates and letters of approval. Date of assignment is shown in each case.

## Type Certificates

Gwinn, 1, 2-place closed land biplane. Pobjoy: Niagara II. (No. 682, May 27).

Beech F17D, 5-place closed landplane. Jacobs L6, L6N, or L6ND. (No. 689, Aug. 26.)

Cessna C145, 4-place closed land or sea monoplane. Warner Super Scarab Series 50. (No. 701, Oct. 1.)

Aeronca 501, 2-place closed land monoplane. Lycoming O-145-A1. (No. 702, Oct. 12.)

Piper J4, 2-place closed land monoplane. Continental A50-1. (No. 703, Oct. 26.)

## Letters of Approval

Akron, Funk B, 2-place closed land monoplane. Akron Funk E. (No. 2-547, Oct. 31.)

## Stock Holdings

The following is official summary of transactions and holdings of officers, directors and principal stockholders of corporations with equity securities registered, filed with the Securities and Exchange Commission Oct. 1-10. Unless otherwise indicated transactions were made in September and holdings are as of the end of the month:

American Airlines, Inc.—C. R. Smith, officer and director, increased 453 common to 3,690 and holds 1,000 conv. deb.

Aviation & Trans. Corp.—Victor Emanuel, director, increased 100 common to 18,500 and holds 13,000 through corporation B (prop. int. not shown) and 5,000 through corporation C. L. I. Hartmeyer, officer, acquired 100 common, holding that amount.

Chicago & Southern Air Lines—D. D. Walker, officer and director, holds 23,118 com. vtc. and increased conv. pfd. 100 to 2,380.

Ex-Cell-O Corp.—H. G. Bixby, officer and director, bought and sold 100 common, holding 200.

Lockheed Aircraft Corp.—Lawrence C. Ames, director, decreased 100 to 7,500. Randolph C. Walker, director, holds 300 directly; through Mrs. J. S. Walker, wife, (prop. int. not shown) decreased 3,000 to 14,400.

National Aviation Corp.—Aviation Sec. Corp., benef. owner, decreased 4 common to 61,651 by exchange.

North American Aviation—Henry B. du Pont, director, increased 2,200 common to 2,300.

Pan American Airways Corp.—H. Preston Morris, officer, decreased 100 \$5 par common to 682.

Thompson Products, Inc.—J. D. Wright, officer, increased 100 common to 500.

United Air Lines Trans.—Sumner Sewall, director, increased 500 common to 7,300.

Aviation Corp. common:

Following are equity holdings of officers, directors and principal stockholders of companies, any of whose securities have become registered with the SEC. Month covered is indicated.  
L. K. Grant, officer, 100 Sept. 1933

## \$195,000 Lockheed Units

Burbank, Cal., Nov. 5—Lockheed Aircraft Corp. has begun construction of a \$95,000 2d floor addition to house the engineering and research departments, to be ready about Dec. 15. Work on the company's proposed \$100,000 final assembly plant will start within a few weeks.

## Set Express Record

New York, Nov. 3—The 66,220 air express shipments in September established a new all-time high, being 6% above October, 1937, the previous record month. Revenue per shipment was the highest for 12 months. Total shipments for the first nine months of 1938 totaled 497,112, an increase of 4.3% over a similar 1937 period.

## AVIATION STOCK TRENDS

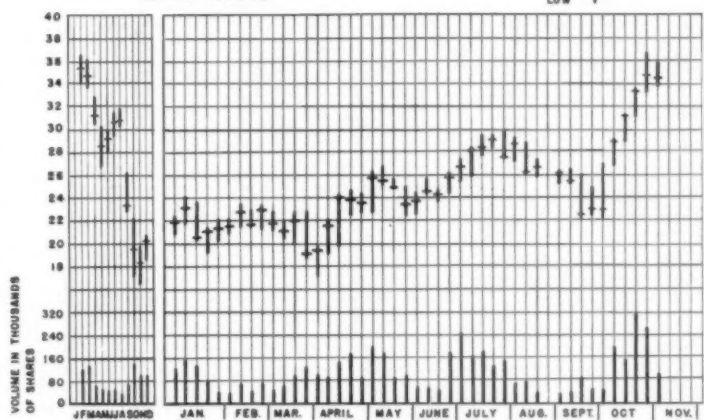
WEEKLY AVIATION AVERAGES  
(1937-1938)

Chart Data Supplied by Wyckoff Associates, Inc.,  
Comments by Philip P. Friedlander

The aviation stocks have consistently run ahead of all other groups, leading from one week to ten days a general sell-off, or rallying ahead about the same period of time. As a compiled group they reached 36.66,—close to 37—the highs of 1937, and then reacted. Even this reaction forecast the minor setback in the general list. Feature of the aviation retreat was the fact that volume dwindled to insignificant proportions. During the week of Oct. 22, the average weekly volume was 318,000, and the following week 266,900 shares, compared to the volume of 96,700 during the week of Nov. 5. This in itself suggested that the reaction would be of minor proportions. We believe that some of the individual aviation issues will seek higher levels immediately, but the group as a whole

will run into supply around 37. If such a point was penetrated, however, the rally would carry to about 38-39.

Judging from past performances, however, it is felt that other groups must catch up with the recent sterling performances of the aviation stocks. A period of consolidation should take place in this area, which means that aviation as a general rule should be considered only for trading mediums and not long term positions—this theory to apply only for the immediate future.

If an individual desires to trade in aviation, a careful study of the highs and lows of the recent moves should be used to guide such transactions. The path has been pretty well established and for a short time this type of trading may prove profitable.

## NEW YORK CURB EXCHANGE

	Week Ending Oct. 29				Week Ending Nov. 5			
	High	Low	Net Change	Sales	High	Low	Net Change	Sales
Aero Supply A .....	37 1/2	35 1/2	— 1/2	3,100	37 1/2	35 1/2	— 1/2	2,200
Aero Supply B .....	37 1/2	35 1/2	— 1/2	3,100	37 1/2	35 1/2	— 1/2	2,200
Air Associates .....	17 1/2	15 1/2	— 1/2	5,200	16 1/2	14 1/2	— 1/2	1,100
American Airlines .....	27 1/2	25 1/2	— 1/2	17,100	27 1/2	25 1/2	— 1/2	20,500
Aviation & Transp. ....	23 1/2	21 1/2	— 1/2	1,600	23 1/2	21 1/2	— 1/2	2,300
Beech Aircraft .....	21 1/2	19 1/2	— 1/2	18,400	20 1/2	18 1/2	— 1/2	6,000
Bell Aircraft .....	7 1/2	6 1/2	— 1/2	3,300	7 1/2	6 1/2	— 1/2	6,900
Bellanca Aircraft .....	5 1/2	4 1/2	— 1/2	2,100	5 1/2	4 1/2	— 1/2	900
Breeze Corps .....	7 1/2	6 1/2	— 1/2	9,300	8 1/2	6 1/2	— 1/2	25,000
Brewster Aero .....	7 1/2	6 1/2	— 1/2	10,700	9 1/2	7 1/2	— 1/2	28,500
Fairchild Aviation .....	16 1/2	15 1/2	— 1/2	14,500	16 1/2	15 1/2	— 1/2	10,200
Grumman Air. Eng. ....	16 1/2	14 1/2	— 1/2	4,800	18 1/2	16 1/2	— 1/2	5,600
Irving Air Chute .....	23 1/2	19 1/2	— 1/2	38,600	24 1/2	21 1/2	— 1/2	38,200
Lockheed Aircraft .....	15 1/2	13 1/2	— 1/2	4,700	15 1/2	13 1/2	— 1/2	1,800
Pan American Airways ..	9 1/2	7 1/2	— 1/2	4,500	8 1/2	7 1/2	— 1/2	900
Penn Central Airlines ..	3 1/2	3 1/2	— 1/2	16,100	3 1/2	3 1/2	— 1/2	7,800
Seversky Aircraft .....	21 1/2	17 1/2	— 1/2	15,500	19 1/2	17 1/2	— 1/2	1,400
United Aircraft war .....	3 1/2	3 1/2	— 1/2	600	4 1/2	3 1/2	— 1/2	1,200
Waco Aircraft .....	4 1/2	3 1/2	— 1/2	2,600	3 1/2	3 1/2	— 1/2	1,300
Western Air Express .....								

## NEW YORK STOCK EXCHANGE

	Week Ending Oct. 29				Week Ending Nov. 5			
	High	Low	Net Change	Sales	High	Low	Net Change	Sales
Aviation Corp. ....	57 1/2	51 1/2	— 1/2	17,400	51 1/2	51 1/2	....	6,500
Bendix Aviation .....	24 1/2	22 1/2	— 1/2	34,200	23 1/2	22 1/2	— 1/2	14,400
Boeing Airplane .....	29 1/2	27 1/2	— 1/2	39,000	28 1/2	27 1/2	....	11,900
Consolidated Aircraft ..	18 1/2	17 1/2	— 1/2	18,600	21 1/2	17 1/2	— 1/2	46,600
Curtiss-Wright .....	7 1/2	6 1/2	— 1/2	149,200	6 1/2	6 1/2	— 1/2	39,300
Curtiss-Wright A .....	27 1/2	25 1/2	— 1/2	47,200	26 1/2	25 1/2	— 1/2	11,500
Douglas Aircraft .....	69 1/2	61 1/2	— 1/2	58,100	69 1/2	64 1/2	— 1/2	23,100
Ex-Cell-O .....	19 1/2	18 1/2	— 1/2	6,000	19 1/2	17 1/2	— 1/2	7,500
Glenn L. Martin .....	34 1/2	30 1/2	— 1/2	81,900	33 1/2	30 1/2	— 1/2	38,500
Natl. Aviation Corp. ....	12 1/2	11 1/2	— 1/2	22,100	13 1/2	11 1/2	— 1/2	18,500
N. American Aviation ..	14 1/2	13 1/2	— 1/2	61,000	14 1/2	13 1/2	— 1/2	42,000
Sperry Corp. ....	35 1/2	33 1/2	— 1/2	37,200	35 1/2	33 1/2	— 1/2	31,000
Thompson Products .....	24 1/2	22 1/2	— 1/2	6,600	25 1/2	21 1/2	— 1/2	9,800
TWA .....	10 1/2	9 1/2	— 1/2	13,800	10 1/2	9 1/2	— 1/2	6,000
United Aircraft .....	37 1/2	34 1/2	— 1/2	86,100	36 1/2	34 1/2	— 1/2	40,700
United Air Lines .....	12 1/2	10 1/2	— 1/2	75,500	12 1/2	11 1/2	....	21,400
Wright Aeronautical .....	117 1/2	105 1/2	— 3 1/2	1,190	112 1/2	106 1/2	— 1/2	150



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